

fitness

HIS EDITION

LIVE LIFE LOOKING GREAT

EXPLOSIVE GAINS

- BUILD MORE MUSCLE
- QUALITY NUTRITION
- FAST RESULTS

HORMONES & HAIR LOSS

What's causing your hairline to recede?

WBFF SA

CHECK OUT ALL THE LATEST ACTION INSIDE!

THE GREAT CARDIO DEBATE

The truth behind crushing calories & blasting fat

NATURAL SLEEP ENHANCERS

Maximise rest for peak performance



Overhaul your calves

Music & performance

THE BIG MUSCLE ISSUE

THE FULL BODY LANDMINE WORKOUT THAT WILL ADD MUSCLE & SCULPT YOUR ULTIMATE PHYSIQUE



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Tom Coleman

USN INTERNATIONAL BRAND
AMBASSADOR, WBFF FITNESS PRO



CHRIS COETZEE
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MY GOALS. MY JOURNEY. MY NUTRITECH.



Cover image of Dylan Dawson
By Cindy Ellis

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BIANCA VAN RENSBURG





ADRIAN COLYN
WBFF Pro & Celebrity Personal Trainer

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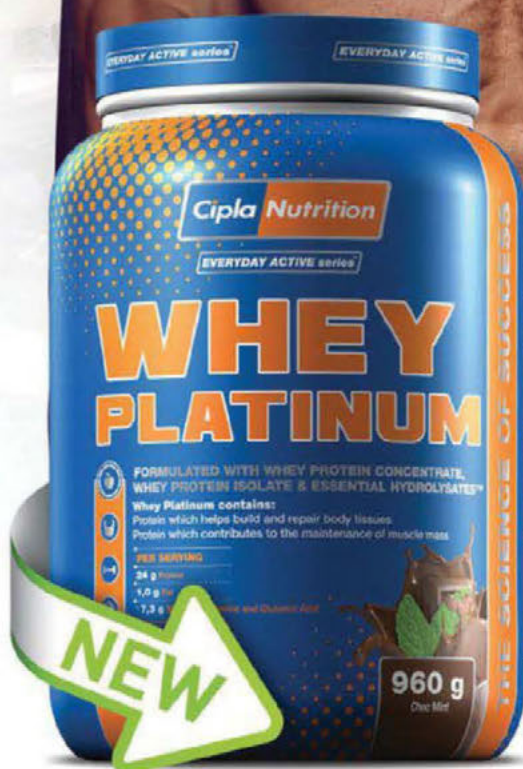
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Experiencing every step of the 2015 Comrades Marathon



IMAGE BY JETLINE ACTION PHOTO

THE VALUE OF EXPERIENCE

Active people are, in general, happier than the rest of society. The reasons for this are numerous and well-known – exercise improves your health so you feel better, it elevates mood by releasing endorphins, it boosts self-image by improving your outward appearance, and improves self-worth through the achievement of challenging physical feats.

However, as I thought back to some of my recent running achievements it dawned on me that there is another reason why we're generally happier people, one that may account for most of that happiness. It's the value you derive from experience.

No, I'm not talking about the knowledge or expertise you gain from years of experience in a sporting code or professional field. I'm talking about the value you derive from the experience of being active and, more importantly, the experiences that being fit and healthy enable you to have.

I recently read with interest about various studies conducted to determine the best way to spend your money to increase happiness. While most would like to believe that you don't need money to make you happy the truth is you do, to some extent at least. However, after a certain point more money can't make you more happy (this is known as the Easterlin paradox – look it up), especially if you use that money to buy material things.

We now have an abundance of psychological research that shows us that experiences bring people more happiness than do possessions. Dr. Thomas Gilovich is a psychology professor at Cornell University and a leading researcher in this field. The key reasons for the lasting happiness that experiences create, according to his research, include the fact that experiences can't be easily quantified and compared (comparison is, after

all, the thief of joy), and when we look back on how we invested our money (and our time too), remembering and reliving experiences makes us happier than owning the possessions we bought. One of Gilovich's more recent studies also highlighted that the element of anticipation of an experience helped to "provide more enduring happiness". In the study, published in the journal *Psychological Science*, Gilovich and his associates aimed to determine whether the benefit of spending money on an experience accrues before the purchase has been made, in addition to after. The results point to a resounding "yes".

It's safe to say then that everything that leads up to an experience, in our case a sporting event, race or competition, are important drivers of our ultimate happiness. It's what makes active individuals happier people above all else, as far as I'm concerned.

The last key point to mention is the importance of living in the moment during that experience. Don't let your mind wonder off to work or other things in your life that may be troubling you while you're up on stage at the bodybuilding comp you've worked so hard for or when the pain and fatigue sets in during that ultra-marathon you've spent the last six months training for. Stop and look around. Drink it in. Immerse yourself in the experience. Feel the emotion; acknowledge what it's taken to get there; revel in the exhilaration; digest the enormity of what you're about to achieve; assimilate every visual and visceral input; savour every moment.

If you want to enrich your life set yourself a big goal – enter an event, any event, just make sure it is something that you enjoy and something that will challenge you. Invest in it. Train and prep hard, just don't forget to enjoy that process, no matter how hard it may get. Dream about the big day, the ultimate experience, regularly, day or night. When you get there take photos and make a video if you can. Once you finish look back at your achievement, often, and relive the experience in your mind. It will make you want to do it again; do more; do better. It will enrich your life more than the car in the driveway or the size of the TV screen in your living room. It will make you happier.

With that, I hope you enjoy your next Fitness His Edition experience.

PEDRO VAN GAALLEN
Editor

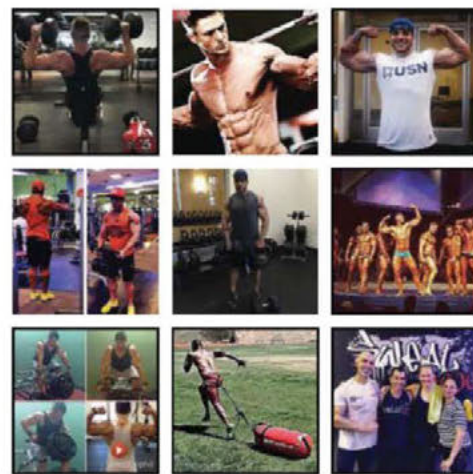
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MUST READ



In case you missed it...

WHAT READERS HAVE BEEN UP TO ON INSTAGRAM



WE ASKED:



On the cover..

HORMONES & HAIR LOSS
THE REAL REASON BEHIND MALE BALDNESS
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CARDIO DEBATE
STEADY STATE OR H.I.I.T? THE TRUTH ABOUT BLASTING CALORIES
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“EVERY MORNING YOU HAVE TWO CHOICES, CONTINUE TO SLEEP WITH YOUR DREAMS, OR WAKE UP AND CHASE THEM!”



BIGGER CALVES
A COMPLETE FIX FOR SKINNY MAN CALVES!
PG54

ADD MUSCLE!
TRY THE FULL BODY LANDMINE WORKOUT
PG42



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"Being one step ahead of the game should form the focal point of your master plan as it is the key in terms of standing out from the crowd."



CONQUER THE CHALLENGE

The 2015 WBFF South Africa held over the weekend of 13 and 14 June 2015 proved yet again that fitness in our country is on the rise. There is no doubt that more people than ever before are getting serious about taking both their physique and their health to new levels, which means the craze that is competitive fitness is alive and well in SA.

With a host of new divisions in the show this year, aimed at enticing even more hopefuls onto the stage, event organisers managed to attract over 230 of the country's most phenomenal physiques, with an audience of around 2,800 people in attendance to watch what is one of the great spectacles on the local calendar. The quality of the production and the entertainment value makes this a show stopper; something everybody who is serious about their physique should experience. If you want to get a taste you can check out the coverage from the show in this magazine (see page 92).

However, prepping for the show wasn't easy as the winter cold seemingly came out of nowhere to blanket the country. With it normally comes a whole host of challenges, especially with respect to staying motivated to get up at the usual time and get to the gym to get the workout done. At the end of the day it's the work we do in private that always shows

in public and winter is the ideal time to really focus and concentrate on making sure we keep our training and eating regimented and strict. When most are scrambling for the gym as the warmer days hit in the next few months, rest assured that when that first day of spring comes around you'll already be showing off what you've built through the winter months.

Being one step ahead of the game should form the focal point of your master plan as it is the key in terms of standing out from the crowd. If you want that to be representative of your physique next summer then you have to hone in and really focus through the tougher winter months to get the job done in the gym. Put the work in now and you'll reap the rewards later. The fact that you're reading this magazine means you're serious about results, and we're just as serious about making sure that we provide you with the right info to get you those results. As such, we have carefully and meticulously selected the features and articles in this issue to make sure you're getting 'bang for your buck' with all the info you need to take your physique and performance to the next level.

Don't forget, we're all ears as well, so please let us know what you need, what you want to see and what information you would like us to include on these pages. This is your journey, your goal and your eventual victory. The greatest reward we could ask for here at *fitness* (His Edition) is to be a part of that journey. That's because the combination of your hard work and a smart work ethic, acquired through the greater knowledge and understanding we aim to foster through the publishing of this magazine, creates a truly great and powerful path to success, no matter what the goal.

So hang in there and stay the course. Summer is coming! We look forward to being a part of your journey as you carve up your physique and elevate your performance over the coming months. Enjoy the process, let it challenge you, let it test you, but never let it defeat you.

Enjoy this issue.

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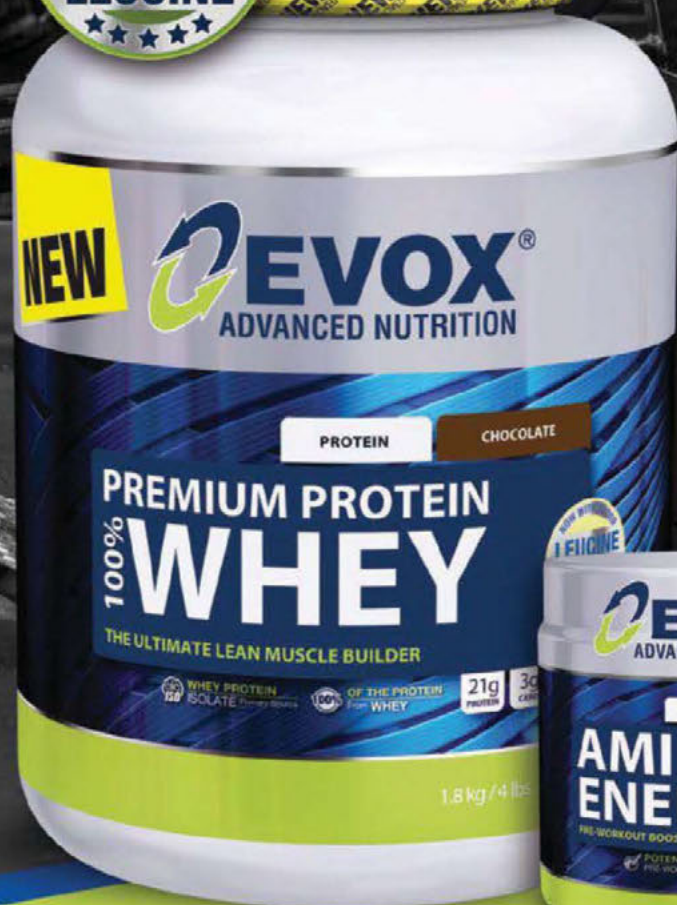
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NIKE FREE-RANGE EXPANDS

In the 11th year of the popular Nike Free franchise, Nike introduces three evolved running styles: the Nike Free 3.0 Flyknit, the Nike Free 4.0 Flyknit and the Nike Free 5.0. The new models take the next step toward harnessing the natural motion of a runner's feet and body – not by adding, but by honing down to the design features that give runners a more natural running experience.

Nike Free takes a research-based, body-led approach to the sole that allows the foot to sit close to the ground and move as nature intended. The hexagonal flex grooves on the outsole of all three Nike Free running shoes provide a fuller range of motion, letting

the foot adapt to the ground, while the Phylite foam offers lightweight cushioning.

The Nike Free 3.0 Flyknit and the Nike Free 4.0 Flyknit have virtually seamless one-piece Nike Flyknit uppers that conform to the shape of a runner's foot and offer support at the same time. Nike Flyknit technology offer areas of stretch, support and breathability exactly where runners need it.

The Nike Free 5.0 shed layers this year and now boasts a full bootie construction that delivers seamless comfort and a flexible, lightweight ride. The mesh material used on the upper and the no-sew overlays also contributes to the overall lightness and breathability of the shoe.

The collection features redesigned uppers engineered to work holistically with the shoe's natural flexibility. The ecosystem offers runners a progression of three natural ride options:

Nike Free 3.0 Flyknit: Nike's most natural ride with a snug Flyknit upper and 4mm heel-to-toe offset.



Nike Free 4.0 Flyknit: A cushioned, natural ride with a contoured Flyknit upper and 6mm offset.



Nike Free 5.0: Nike's most cushioned, natural ride with an engineered upper and 8mm offset.



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Upcoming COURSES
EARN CPD POINTS

JULY

- Life Coaching (Inner Life Skills) (JHB)
- Personal Trainer (JHB, KZN, CPT)
- Exercise Specialist (JHB, KZN, CPT)

AUGUST

- Functional training specialist (JHB)
- Sports Massage (JHB, KZN)
- Kids Development (JHB)
- Sports Conditioning with SAQ (JHB, CPT)
- Studio Cycle (JHB, CPT)
- Pre and Post Natal Exercise (CPT)

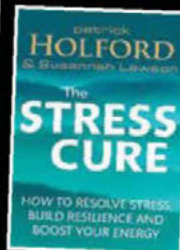
SEPTEMBER

- Aqua Instructor (JHB, CPT)
- Group Fitness Instructor (JHB, KZN, CPT)
- Pre and Post Natal Exercise (JHB)
- Kettlebell Instructor (KZN)
- Studio Cycle (KZN)
- Kids Development (CPT)
- Reboundology Trainer (CPT)

OCTOBER

- Pilates ABC (JHB, CPT)
- Kettlebell Instructor (JHB)
- Yoga Muscles and Motion (JHB, CPT)
- Kids Development (Durban)
- Sports Conditioning with SAQ (KZN)
- Pre and Post Natal Exercise (CPT)
- Fighting FITT (CPT & JHB)

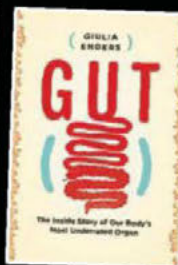
OUR TOP FITNESS READS THIS MONTH



1 THE STRESS CURE: THE ANSWER TO A 21ST CENTURY PANDEMIC

By Patrick Holford and Susannah Lawson.

In this book Holford says that modern-day living and the stress that comes with it has hijacked our ancestors' fight or flight response, putting us on non-stop high alert. This chronic stress shuts down proper digestion and the repair of the cells. It has dire long-term health consequences, increasing our risk for heart disease and doubling the risk for obesity, dementia and diabetes. In *The Stress Cure* he explains that the way out of the stress trap is to address both your body, your mindset and your habits to learn to build stress resilience and to increase your energy levels to deal with challenging situations. This involves diet, nutritional supplements, exercise and lifestyle changes. The book examines why we become stressed in the first place, how the stress response is unique to each of us and why stress, particularly when combined with fatigue and bad eating habits, can create a vicious cycle that has serious implications for our long-term health.

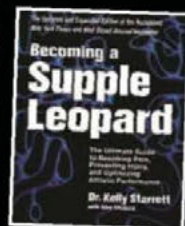


2 GUT: THE INSIDE STORY OF OUR BODY'S MOST UNDERRATED ORGAN

By Giulia Enders

With quirky charm, Giulia Enders explains the gut's magic, answering questions like: Why does acid reflux happen? What's really up with gluten and lactose intolerance? How does the gut affect obesity and mood? Enders's beguiling manifesto will make you finally listen to those butterflies in your stomach: they're trying to tell you something important.

www.amazon.com



3 BECOMING A SUPPLE LEOPARD 2ND EDITION: THE ULTIMATE GUIDE TO RESOLVING PAIN, PREVENTING INJURY, AND OPTIMIZING ATHLETIC PERFORMANCE

By Kelly Starrett and Glen Cordoza

Improve your athletic performance, extend your athletic career, treat stiffness and achy joints, and prevent and rehabilitate injuries—all without having to seek out a coach, doctor, chiropractor, physical therapist, or masseur. In *Becoming a Supple Leopard*, Dr. Kelly Starrett—founder of MobilityWOD.com—shares his revolutionary approach to mobility and maintenance of the human body and teaches you how to hack your own movement, allowing you to live a healthier, more fulfilling life. This new edition of the New York Times and Wall Street Journal bestseller has been thoroughly revised to make it even easier to put to use. It also contains more than 80 pages of new content.

www.amazon.com



GO HEALTH LAUNCHES IN SA

Active, health-conscious South Africans now have access to state-of-the-art health club facilities, with the latest technology and equipment from Technogym, through GO Health. The first gym in the chain opened its doors at the Northview Shopping Centre in May 2015, with monthly fees of R259. The new club in Northwold is the first of 40 GO Health clubs that will roll out between now and 2019. GO Health promises to give health lovers unprecedented value for less, giving many more South Africans the opportunity to live a healthier, fitter lifestyle. Qualified wellness consultants are on call, aided by a bespoke programme to track your progress and fitness through an app. All of this is enclosed in a warm, friendly and motivating environment.



EAST COAST TRANSFORMATIONS LAUNCHES

The recently launched East Coast Transformations offers a diverse and unique approach to online training and body transformations.

To find out more contact Nick Robert on nick@ectfit.co.za or Jaco Moolman on jaco@ectfit.co.za, web address www.ectfit.co.za



PUMA PARTNERS WITH WINGS FOR LIFE WORLD RUN

Puma has confirmed a multi-year partnership with the Wings for Life World Run that kicked off in May this year. This unique event enables runners to compete simultaneously around the world from 35 locations, running as far as they can before a moving finish line, called the Catcher Car, overtakes them. Puma will be the exclusive official sportswear partner for the Wings for Life World Run, providing running products to event staff and marketing support to broaden awareness to

the charitable initiative.

Staff at each event will be outfitted in Puma footwear, apparel and accessories, and all participating runners will receive gift bags with Puma accessories. Red Bull founder Dietrich Mateschitz co-founded the Wings for Life Foundation, which funds scientific research to find a cure for spinal cord injuries. 100% of all starting fees and donations go directly to spinal cord research.

Find out more on www.wingsforlifeworldrun.com.

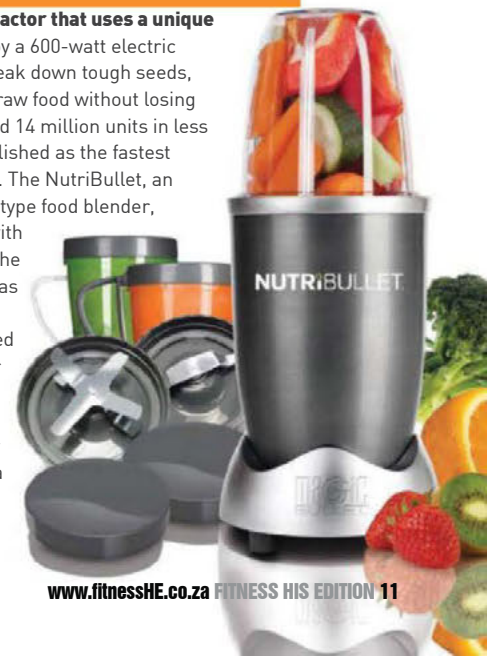
NBA ANNOUNCES JO'BURG EXHIBITION

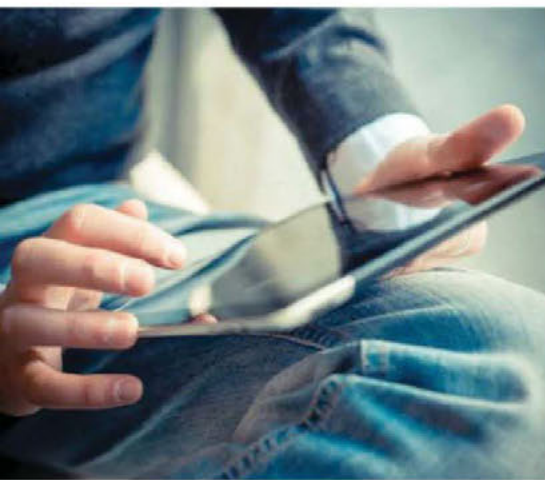
The NBA will stage its first game in Africa this August when Johannesburg hosts an exhibition fixture – a match between Team Africa and Team World. It will be held at Ellis Park on August 1. The NBA said the match would benefit a number of South African charities, including the Nelson Mandela Foundation. NBA commissioner Adam Silver said: "The NBA has worked hard to grow the game of basketball in Africa, and I am excited to take this next step of playing our first game on the continent." (Source: Skysports.com)



NUTRIBULLET GROWS FROM LOCAL ROOTS

The iconic NutriBullet – a food extractor that uses a unique cyclonic blending action, powered by a 600-watt electric motor, to shred, crack, grind and break down tough seeds, stems and skins from unprocessed raw food without losing any of the nutritional value – has sold 14 million units in less than three years, and is firmly established as the fastest selling kitchen appliance in the USA. The NutriBullet, an ingenious variation on the standard-type food blender, utilises 'upside-down' technology, with the spinning blade uncoupled from the motorised base unit. This concept was developed by a team working out of Los Angeles, California that is headed up by Cape Town-born entrepreneur Colin Sapire. Sapire was schooled in the Eastern Cape before moving back south to study at the University of Cape Town, where he completed a B.Com degree and a CTA in 1982.





GET YOUR GEAR ONLINE

South African shoppers can now get first bite at the latest sneakers and branded sports goods online, with the addition of Sportscene and Totalsports' new e-commerce sites to The Foschini Group (TFG) online mall. Outdoor and adventure store DueSouth will also be joining the virtual mall. Features of the new online stores include pre-order functionality, as well as adding sporting events straight from the webpage into your calendar. TFG will continue to add stores to the mall, giving consumers access to all 17 online stores by 2018.

Visit www.tfg.co.za to browse and shop.

FITPRO COURSE DATES

JOHANNESBURG

- **4 July** – Scientific weight loss
- **23 July** – Group fitness trainer
- **25, 26 July** – Olympic weightlifting course
- **8 August** – Pilates mat
- **15 August** – Advanced biomechanics
- **21 August** – Stretching (SWS)
- **22 August** – Plyometrics

CAPE TOWN

- **4-5 July** – Kettlebell ballistics
- **11-12 July** – Exercise and pregnancy
- **11-12 July** – Balance ball
- **4 August** – Exercise science
- **1-2 August** – Sports injuries
- **22 - 23 August** – Strapping

For more info or to book visit www.fitpro.co.za.



EVENTS CALENDAR



>> 2015 SANLAM CAPE TOWN MARATHON

Africa's first IAAF Silver Label-accredited marathon will form part of a five-event running festival that is set to attract over 20,000 athletes, with 17 countries already represented in the line-up. The USA is leading the charge with the largest contingent yet, with the UK, France, Australia, Germany and the Netherlands not far behind. And, of course, marathon-loving African countries like Kenya and Zambia are high up on the list.

Date: 20 September 2015

Venue: Green Point A track, Cape Town

For more information visit
www.capetownmarathon.com.



>> PICK N PAY KNYSNA OYSTER FESTIVAL

South Africa's premium sport and lifestyle festival, the 32nd annual Pick n Pay Knysna Oyster Festival, once again takes place during July. From cycling and running, to swimming and paddling, the festival boasts some of South Africa's most scenic multi-disciplinary competitions, including the Big5 Sport Challenge.

Date: 3-12 July 2015

Venue: Knysna, Western Cape

Events: Momentum Weekend Argus Knysna Cycle Tour presented by Rotary, the Knysna Dragons Lagoon Mile Swim, the Salomon Featherbed Trail Run presented by GU, the Totalsports Xterra presented by Rehidrat@ Sport, and the Momentum Cape Times Knysna Forest Marathon and Half Marathon. **For more info visit** www.pnpoysterfestival.co.za, **contact Knysna Tourism at 044 382 5510**, or **connect on Twitter @OysterFestival or on Facebook/KnysnaOysterFestival**.

>> TOUR OF LEGENDS MTB STAGE RACE

After a hiatus, the Tour of Legends mountain bike stage race makes a return to the calendar in 2015. The three-day stage race is held almost entirely inside a big five game reserve. The venue for this event is malaria free and is less than a three hour drive from Johannesburg and Pretoria.

Date: 14-16 August 2015

Venue: Legends Golf and Safari Resort, Limpopo

Distances: 50-60km per stage

For more info visit www.touroflegends.co.za.



>> HOLLARD JOZI URBAN MOUNTAIN BIKE ADVENTURE

The Hollard Jozi Urban Mountain Bike Adventure is a race for all kinds of riders, from professionals to weekend warriors and newbies and novices. Along with the Elite Categories there will be a variety of entry categories for those of a more creative inclination. This year riders can look forward to a tougher 54km route with fewer bottlenecks and less congestion due to a seeded start, and more water stops.

Date: 6 September 2015

Venue: Marks Park, Johannesburg

Distances: 54km & 22km

For more info visit UrbanMTB or follow [@UrbanMTB](https://www.instagram.com/UrbanMTB).

To enter visit www.juma.co.za or www.cycleevents.co.za.

>> 16TH BIENNIAL SASMA CONGRESS

Londocor Event Management will be hosting the 16th Biennial Congress of South African Sports Medicine Association (SASMA) later this year. The biennial SASMA meeting has taken on the mantle of Africa's showpiece for sports and exercise medicine.

Date: 20-22 October 2015

Venue: Sandton Convention Centre, Johannesburg

For more information visit
www.sasma2015.co.za or email
yvonne@londocor.co.za.

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MUSCLE



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The indispensable foundation in most athletes' diets is whey protein for a good reason: It's digested instantly, absorbed efficiently and has a superior amino profile, being high in the essential amino acid leucine, which plays a key role in initiating protein synthesis. Each serving of BIOTECH 100% Pure Whey™ contains 24 grams of ultra pure, cross-flow micro-filtration process whey protein, stripped of fat, carbs, fillers, sugars and lactose. The cross-flow micro-filtration process produces undenatured protein with the valuable subfractions intact.

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**DID YOU KNOW?**

Placing your tongue on the roof of your mouth when you do crunches will help align your head properly, which helps reduce neck strain.

SIT-UPS HAVE RECEIVED SOMEWHAT OF A BAD REP OF LATE.

However, when done correctly the sit-up offers numerous benefits: it increases the range of motion of your trunk as it makes your abdominals work harder and longer. This does require a great deal of core strength to get right so avoid doing sit-ups with your feet anchored. This places unnecessary strain on your back and takes the focus off your abs.

10%

THE DEGREE TO WHICH ADDED PLANT STEROLS IN VARIOUS COMMERCIALLY AVAILABLE FOOD CAN HELP REDUCE LDL CHOLESTEROL.

MAINTAIN A HEALTHY BLOOD PRESSURE

- ▶ Exercise more
- ▶ Eat a healthy diet
- ▶ Lose the excess weight
- ▶ Limit alcohol intake
- ▶ Don't smoke

**ANOTHER REASON TO DRINK MORE WATER!**

Researchers at Vanderbilt University Medical Center found that water raises our alertness. The scientists discovered that water increases sympathetic nervous system (SNS) activity, which is responsible for activating our body's responses under stress, raising our blood pressure, energy use and alertness.

**BIOHARMONY ULTIMATE C IMMUNE BOOSTER**

Bioharmony Ultimate C Immune Booster delivers the optimum combination of buffered vitamin C, olive leaf extract, Echinacea and minerals to fight infection and soothe respiratory mucosa that builds up during colds, flu, sinus, and chest infections. Vitamin C supplements are known for aiding the immune system in fighting against colds and other sicknesses, but supplements

are often highly acidic, making it hard for sensitive individuals to digest them comfortably. Bioharmony Ultimate C contains buffered vitamin C which is often gentler on the body and can be taken without stomach upset and provides a longer-lasting effect. Available from Dis-Chem, Pick n Pay pharmacies and selected Pharmacies nationwide at the RRP of R97.65 (60 tablets).

DID YOU KNOW THAT GREEN TEA CAN HELP WITH DANDRUFF CONTROL?

Packed with antioxidants, green tea will gently exfoliate your scalp and rid it of flakes.

**CONSUMING FIBRE IN THE MORNING**

means you'll be less hungry later in the day, when you're most likely to feel tired and binge on sugar-laden foods.

**SOLAL® IMMUFEND™**

Solal®'s Immufend™ is a new range that treats the causes and symptoms of colds and flu. Immufend™ products can be used separately or combined together depending on the need. For instance, Immufend™ Immune Defence can be topped up for a few days with Immufend™ Cold & Flu if symptoms such as a runny or blocked nose develops and/or with Immufend™ Cough & Chest for coughs and chest-congestion. Use Solal®'s Immufend™ range on a daily basis, even when healthy, to help keep the immune system strong. Immune Defence capsules (R130) contain extracts that work in three ways to support immune function:

1. Activates the immune response
2. Strengthens the immune system
3. Protects and shields the immune system





EAT MORE PISTACHIOS, THEY:

- ✓ Help to lower blood pressure as they are rich in monounsaturated fatty acids,
- ✓ Aid in the control of blood glucose,
- ✓ Boost immunity due to the high levels of copper, magnesium, and B vitamins they contain,
- ✓ Enhance skin quality due to the vitamin E content,
- ✓ Promote healthy vision due to the antioxidants they contain,
- ✓ Improve cholesterol as they are rich in phytosterols, the plant sterols which reduce the absorption of dietary cholesterol from different foods.

TERRIFIC TOMATOES

Tomatoes contain lycopene, an antioxidant linked to a lower risk of blood clots. A 2012 study of 1,000 people in the journal Neurology found that those who had high blood levels of lycopene were least likely to have a stroke. Cooked tomatoes supply more lycopene, as the heat breaks down the cell walls and improves our body's absorption of the compound.



EAT MORE COLOUR

Foods that are bright in colour are not only nice to look at; they're also packed with flavonoids and carotenoids, powerful compounds that bind the damaging free radicals in your body, lowering inflammation.



SWEAT IT OUT

Working up a sweat for just an hour a week will deliver a range of health benefits including a reduced risk of heart attack, better mood, and lower blood pressure.

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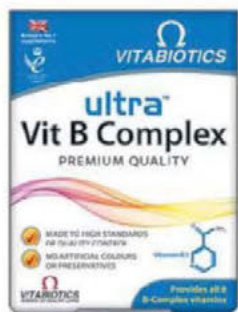
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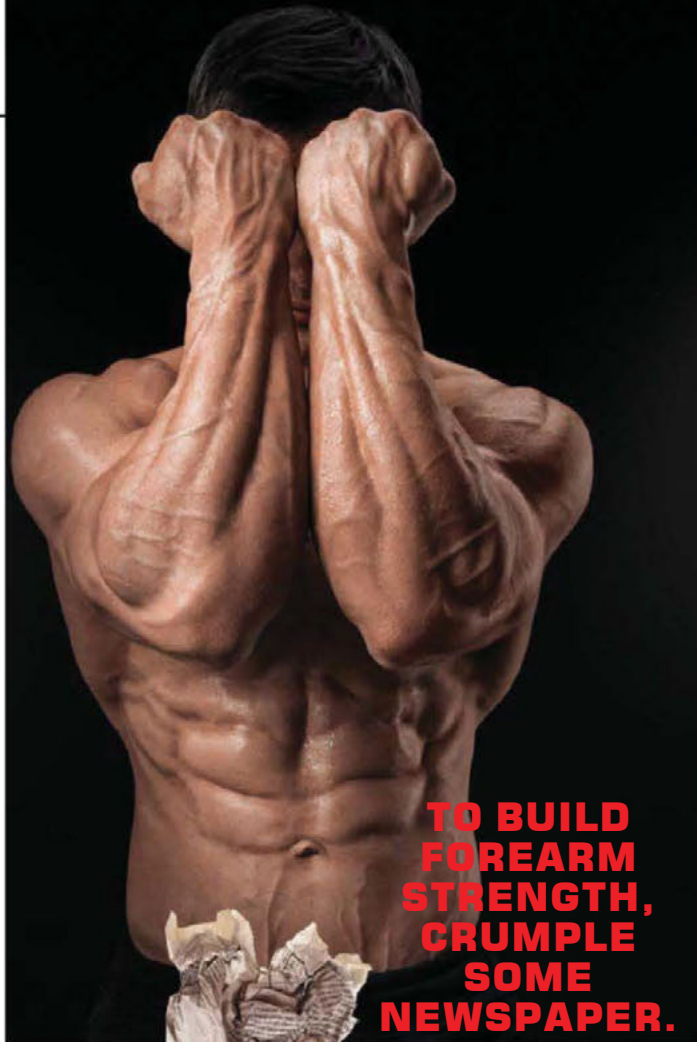
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Ultra™ Vitamin B Complex from Vitabiotics includes all eight essential B vitamins, including vitamins B6 and B12, thiamin (vitamin B1), riboflavin (vitamin B2), niacin (vitamin B3) and biotin. These vitamins play vital roles in the body and are essential for helping to maintain all-round health, including hair and skin health and an optimally functioning nervous system. As the B vitamins are water-soluble, which means that they are excreted in the urine, they can be quickly depleted from the body. Accordingly, a daily vitamin like Ultra™ Vitamin B Complex can help to safeguard your daily intake of essential B vitamins. **Available at Dis-chem stores and community pharmacies nationwide.**



TO BUILD FOREARM STRENGTH, CRUMPLE SOME NEWSPAPER.

Lay a newspaper sheet on a flat surface and, using only one hand, crumple it into a ball for 30 seconds. Repeat with the other hand. Repeat until the entire Sunday paper has been annihilated!

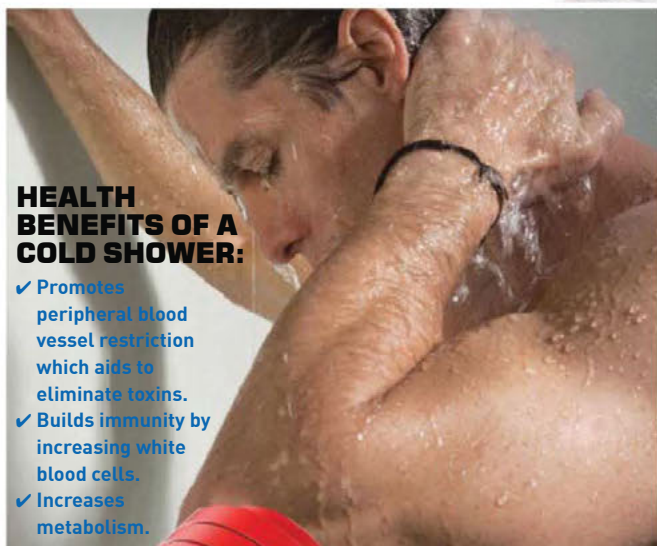
GLUTEN-FREE; FAD OR FACT?

The number of people who are adopting a gluten-free lifestyle is rapidly increasing because many people feel better without it. The top reasons people eliminate gluten are less bloating and digestive issues and more energy. A gluten-free diet completely eliminates foods that contain gluten, a protein found in wheat, barley and rye. People with celiac disease or those who are gluten intolerant will feel pain after eating gluten-rich foods such as pasta, bread or pastries and will suffer from abdominal discomfort on a regular basis. For these reasons rice flour, an important ingredient in many gluten-free recipes, has become extremely popular, especially for use during baking. **Pouyoukas rice flour**, for instance, can be used in a variety of recipes that can be found on www.pouyoukas.co.za.



HEALTH BENEFITS OF A COLD SHOWER:

- ✓ Promotes peripheral blood vessel restriction which aids to eliminate toxins.
- ✓ Builds immunity by increasing white blood cells.
- ✓ Increases metabolism.



DID YOU KNOW?

MUSCLE MEMORY IS CREATED BY PRACTISING AN ACTION OVER AND OVER AGAIN. WITH REPETITION OUR MUSCLES FINE TUNE THEMSELVES. BECOMING MORE PRECISE AND EXACT IN WHAT THEY DO.





KEEP IT STRONG

Strength training is a key part of any fitness plan, both for variety and to add calorie-burning, strength-producing, shapely muscle to your frame.

GIVE IT A CHECK

Testicular cancer is the most common cancer in men between 15-35 years of age. Don't be afraid to check for bumps at least once a month. Each testicle should feel smooth and slightly soft. One should hang slightly lower than the other.

GET YOUR HEALTH TO 'POP'



Poppy seeds are oilseeds obtained from the opium poppy. The ripe seeds are highly nutritious and less allergenic than many other seeds and nuts. While they are most commonly used as decoration for bagels, rolls or as a salad dressing, these tiny black seeds pack a serious health punch. Pouyoukas poppy seeds, for example, are loaded with fibre, boasting 3.4g of dietary fibre per two tablespoon serving. One teaspoon of poppy seeds also

contains 4% of the recommended daily intake of phosphorous and calcium, two nutrients that help keep teeth and bones strong. Due to their small size, Pouyoukas poppy seeds can be difficult to consume on their own. However, you can add a few spoonfuls of seeds to your cereal, smoothie or salad dressing.

Visit www.pouyoukas.co.za, follow PouyoukasFoods on Twitter and like Pouyoukas on Facebook for more info and suitable recipe ideas.

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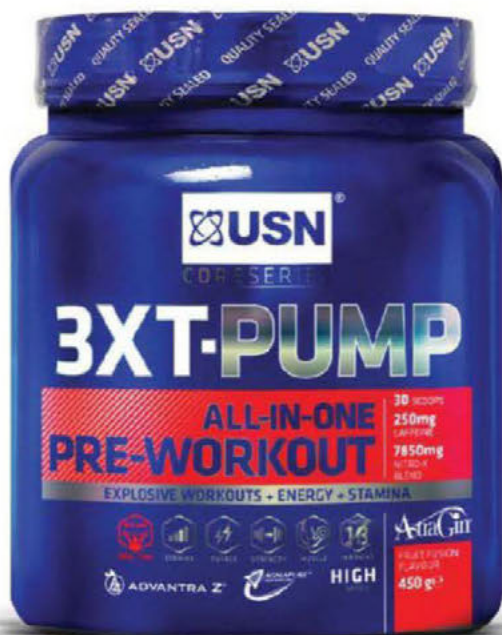
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USN's 3XT-PUMP All-In-One Pre-Workout, part of the company's hardcore range, is formulated to include the most scientifically grounded nutritional technology to help you enhance your performance and recovery potential. Patented and licensed ingredients, which have been shown to improve exercise tolerance levels and output, are included, along with high caffeine levels (250mg per serving). Carbohydrates are included as they have been shown to improve performance levels during hypertrophy training sessions, aiding ATP production and recovery.



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Founded in 2008 by Alex Savva and Don Gauvreau, PharmaFreak® offers an extensive range of potent and effective sports supplements which will now be available for purchase from Dis-Chem stores nationwide. PharmaFreak® is a dedicated industry leader in researching, developing and creating the world's strongest supplements made with premium, clinically-validated ingredients and the highest level GMP quality control standards.



GNC TOTAL LEAN™ LEAN BAR

GNC's Total Lean™ Lean Bars are packed with the nutrients your body needs to keep you going between meals. The great-tasting bar contains protein and fibre to keep you feeling full for longer. It's low in calories, has zero trans-fat and is available in various flavours including Chocolate Chip, Strawberry, Blueberry and Chocolate Peanut Butter. Visit www.gnc.co.za/stores to find your closest outlet.

CHROME STORE OPENS IN CAPE TOWN

CHROME
SUPPLEMENTS & ACCESSORIES

Leading supplement retailer Chrome Supplements & Accessories has expanded the company's footprint into the Western Cape with the official opening of a store in Cape Town. The new Cape Town branch, which opened on 26 June in the Tyger Valley Shopping Centre in Bellville, is the first of many new stores planned for the region. With the growth in demand in the supplement industry, Chrome is confident that the venture will be as successful in the Western Cape as it has been in Gauteng. Chrome has a tried and tested range of over 2,000 products, from health and performance supplements, to training accessories and apparel, offering a one-stop shop for the muscle-building, fit-minded and health-conscious consumer. Chrome already boasts an established footprint of 14 successful retail outlets and aims to open an additional 20 retail stores by the end of 2016, with the possibility of expansion into international markets too. **For more info or to find a store visit www.chromesa.co.za or contact 0861 000 638. For franchise opportunities email franchise@chromesa.co.za.**



BIOTECH® SET TO CHANGE THE GAME

Biotech® is a company ready to challenge the supplement industry status quo by developing superior products that offer unrivalled purity and quality to deliver what they promise. BioTech® aims to create supplements that set the standard by which all others are judged and, most importantly, offer products that deliver results, because results are fundamental in this industry. Whether you're a professional athlete or fitness enthusiast, a bodybuilder or a powerlifter, it takes all you've got to make it to the top, and the range of Biotech® Sports Nutrition Supplements can help you get there. Available from Supplement World, BodyStock, Muscle Shop, Core Fitness (Chaos Hardcore Barbel) and CAW Nutrition. **For more info on the full range of products available visit biotechnutrition.co.za.**



PHYTO PRO CHOCOLATE PROTEIN SHAKE

Phyto Pro Chocolate Protein Shake uses Phyto Pro Pea Protein Isolate as a base, and adds in Fair-trade African cocoa to flavour, a blend of non-GMO xylitol and stevia to sweeten, and pink Himalayan Crystal Salt to enhance trace-mineral balance. Phyto Pro created this blend for clients who want to benefit from the positive health effects of pea protein isolate and appreciate the convenience of the quick mix-and-go, low carbohydrate formulation. **For more information or to locate your nearest stockist visit phytopro.co.za or engage with PhytoPro on Facebook.**



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THINKING INSIDE THE BOX

CROSSFIT AND INJURY PREVENTION

» By Julian Reichman-Israelsohn, owner and head trainer at CrossFit Platinum

■ ANY SPORT OR ACTIVITY EXECUTED AT HIGH INTENSITY IS GOING TO PUSH AN ATHLETE TO A POINT OUTSIDE OF THEIR COMFORT ZONE.

When you are outside your comfort zone there is a chance that your technique may suffer. However, this isn't only restricted to high intensity exercise; it is also applicable to endurance events when fatigue sets in. By the end of ultra-endurance events especially, such as the Comrades Marathon or Ironman, the athlete's running style, technique and efficiency doesn't look anything like it did at the start of the race. While this should not be taken as an excuse for poor technique, it is acceptable to drop from 100% to 90% in terms of movement efficiency and execution.

The real problem comes in when technique goes out the window completely and natural movement is compromised. When this happens our bodies start to compensate, shifting stress and force from weak and tired muscles to accessory muscles which, in

most cases, aren't designed, equipped or conditioned to perform the task efficiently. This is when the risk of injury increases along the movement chain, or along complex joint structure such as the hips, shoulders or lower back, or a point of weakness in the extremities. This is the reason why the high intensity environment of CrossFit has developed somewhat of a bad name...

Many of these problems are grounded in our conventional approach to physical development, which has meant that most guys have transitioned from the functional movements and exercises performed in physical education classes at school, to exercises in mainstream gyms that focus on enhancing aesthetics, particularly the muscles that are most visible from the front. There is a general lack of thought or focus given to the muscles at the back of the body or

the deep, supporting and postural muscles that are vital for efficient, powerful human movement.

This leads to compromised joint mobility and poor movement efficiency due to the muscle imbalances created by this 'one-sided' training focus. When people with these imbalances enter into high intensity or high volume training situations they are forced to engage muscles that have often been neglected for years. These athletes will battle to move efficiently and tend to find themselves in a constant fight during movements that require a full range of movement, which negatively affects technique, as explained above. This problem is further compounded when athletes try and go too heavy too soon.

The related injuries that seem to be most prevalent in the CrossFit arena tend to affect the shoulders and back the most. This is a broad

description though as there are many types of shoulder and back injuries, and varying degrees of injury. However, the more common issues among CrossFitters include rotator cuff injuries. This is a group of muscles around the shoulder girdle and shoulder blade (scapula) that are designed to support the shoulder joint in terms of its main functions. They are secondary muscles designed to support the bigger primary muscles in moving and controlling the upper limbs.

STRUCTURED APPROACH

The most common course of action to rectify and avoid the risk of injury is multifaceted; develop the deep supporting and postural muscle groups, as well as all the stabilising muscles required for the specific activity; mobilising the major joints of the body; focusing on developing balanced strength between agonist (supporting) and antagonist (opposing) muscle groups; stretching and lengthening the muscles following repeated contraction; and myofascial release and massage.

This increased strength, mobility, flexibility and suppleness doesn't happen overnight. It takes many months and often years to make the physical changes that will reduce the risk of injury and improve performance. This timeframe is exaggerated by years of incorrect training techniques and modern sedentary living, but with the right approach it is possible to make your body bulletproof for just about any form of activity or exercise. Elite athletes already include these elements in their routines and don't wait for injury to strike before they address these underlying issues. As such, everyone from CrossFitters and rugby players, to runners, cyclists and triathletes could benefit greatly from a more structured approach to what many in the industry refer to as prehabilitation. If you are at a loss as to what to do get hold of a physiotherapist, biokineticist, coach or a qualified exercise professional to assist you. ■



ABOUT THE AUTHOR:
Julian Reichman-Israelsohn is the owner and head trainer at CrossFit Platinum

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answer it for you.

MEN'S FITNESS

QA



[WEIGHT GAINERS]

Q I'm 25 years old and weigh 59kg. I've been training for more than a year now but have failed to gain weight or develop abs. I'd like some advice on what supplements I must buy in order to gain weight. *Elliot Mbongeni*

A Building muscle while simultaneously losing sufficient body fat for your abs to show through is no easy task. However, with diligence, hard work and perseverance you can certainly achieve your goal of gaining muscle mass and sporting that desirable six pack. Below are some key diet, supplementation and training tips that I'm sure will help you in your quest:

1 EAT SUFFICIENT PROTEIN

For those serious about adding muscle mass a good rule of thumb is to aim for at least 2,5-3g of protein per kilogram of bodyweight. For an 80kg person this would equate to around 200-240g per day. This will support the muscle-building and repair process in response to your weight training.

2 STAY WELL HYDRATED

Water makes up more than two thirds of your body tissue. A well-hydrated body is significantly more efficient at building muscle and also enables you to deliver peak performance in the gym. I suggest a minimum of 3-4 litres of water per day.

3 USE WHEY PROTEIN

A whey protein shake with breakfast is a great way to start your day. As it is fast-digesting, it acts to rapidly stop the muscle breakdown catabolism that occurs in the last few hours of sleep due to a lack of circulating amino acids. Try getting in 30-40g of whey immediately on waking each morning. Whey protein is also an ideal component in pre- and post-workout shakes, again due to its fast action. This helps get amino acids to your body quickly so it can halt protein breakdown during the workout and immediately stimulate protein synthesis (muscle growth) after training.

4 SUPPLEMENT WITH CREATINE

Creatine is one of the nutritional supplements that has stood the test of time and emerged as the undisputed heavyweight champion

when it comes to packing on muscle. Some first-time users report as much as a 5kg gain in bodyweight in as little as two to three weeks. Take 3-5g with both your pre- and post-workout shakes and on non-training days take one 5g serving with breakfast. Use in cycles of 8-10 weeks 'on' and four weeks 'off'.

5 FOCUS ON POST-WORKOUT NUTRITION

The post-workout meal (along with breakfast) is the most important one in your muscle-building nutritional plan. The first hour following an intense workout is considered to be a 'window of opportunity'. During this period the heightened insulin sensitivity of your muscle tissue coupled with a favourable hormonal environment is such that nutrients consumed during this period are rapidly absorbed and utilised by the body. Ensure you consume an easily digestible meal as soon as possible after completing your workout. This meal should be composed of 50-100g of carbohydrates, 30-50g of protein and should be low in fat. Mass builder or recovery shakes are often excellent choices as they are generally low in fat and contain highly bioavailable proteins and carbohydrates.

6 TRAIN WITH HEAVY WEIGHTS

Muscles need to be regularly and progressively overloaded to sustain growth so challenge yourself regularly to lift more weight during each successive training session. This may require that you decrease your training volume and increase your intensity. After performing a couple of warm up sets with the

first exercise for a particular body part, don't waste time or energy performing unnecessary warm up sets on the following exercises for that body part. Go straight to the heavier weight.

7 USE GOOD FORM

Perform your exercises with good form, only using controlled cheating when necessary. Never cheat to reduce intensity. Controlled cheating should only be used as a means of increasing intensity – in other words to get one or two more reps out of a set after reaching muscle failure. If the weight is too heavy your form will be too sloppy to be effective. If, on the other hand, the weight is too light, you may use great form but you won't progress without the challenge of lifting incrementally more weight over time. This is the basis of proper periodisation.

8 ENSURE ADEQUATE REST

Train each body part no more than once a week when isolating muscle groups, and always take a day or two off during the week to ensure adequate recuperation and recovery.

9 BE CONSISTENT AND PERSISTENT

"Rome wasn't built in a day." Developing a physique to be proud of is a long-term endeavour.

Impatience with the body building process is the greatest threat to you ever achieving your goals.

10 TRAIN WITH PASSION

Passion is what fuels your drive, delivers the intensity you require to achieve your goals, and ensures you stick with it until the end. ■



"THE FIRST HOUR FOLLOWING AN INTENSE WORKOUT IS CONSIDERED TO BE A 'WINDOW OF OPPORTUNITY'."

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RAZER NABU X

The Razer Nabu X uses a no-screen notification interface as it vibrates when you get an incoming alert from your phone and the LEDs light up in customisable colours. Data such as steps, distance covered, calories burnt, hours slept, active minutes and goals are tracked by the Nabu X's accelerometer and algorithms, with progress displayed on a wide selection of companion iOS or Android fitness apps. Billed as a "social wearable" device, it contains Razer's

proprietary Pulse technology that allows Nabu and Nabu X bands to 'talk' to each other when they are within a specified proximity. This creates fun, new ways of connecting with others and interacting with the world, like shaking hands to exchange info, or competing against each other by comparing data or engaging in multiplayer games. The device also offers 5-7 days of active battery life and up to 30 days on standby. It is water-resistant up to 1m.

TECH JUNKY

MONSTER ADIDAS ORIGINALS HEADPHONES

Monster has partnered with leading sportswear label, Adidas to create the high-performance, street savvy and stylish Monster Adidas Original Headphones. This foldable device boasts a minimalistic, sleek and comfortable design. The noise isolation feature ensures uninterrupted dynamic sound. The MusicShare features allows users to share music with friends with the help of the dual audio input jacks to link headphones together.

Available in a white and a black design from music stores nationwide at the RRP of R4,499. Resellers can contact Phoenix Distribution on sales@phoenixdistribution.co.za or call 011 592 9200 or 021 487 4640.



Available from iStore and Dion Wired at a RRP of R3,999.

FITBIT SURGE

The Fitbit Surge is a sleek fitness watch that offers GPS tracking, continuous wrist-based heart rate monitoring, all-day fitness tracking and smartwatch functionality in one device, with up to seven days of battery life (168 hours for heart rate, five hours in GPS mode). The device's multi-sport mode allows users to easily

record running, cross training, cardio or biking workouts, which automatically syncs wirelessly to a user's account where they can easily view their exercise summaries on their smartphones. The continuous, automatic wrist-based heart rate tracking is achieved with Fitbit's PurePulse™ optical heart rate technology.



GARMIN FÉNIX 3

Garmin recently released the fenix 3, the latest GPS sportwatch for demanding athletes and outdoor adventurers. This sophisticated watch supports a full range of sport activities, from advanced fitness training, swimming and trail running, to triathlon, cycling and hiking, providing feedback and a wealth of data on a multitude of metrics. Sporting a new, slimmer design than its predecessor, a stainless steel bezel, high resolution colour display and smartwatch features, the new fenix 3 is also suited for everyday use. When paired with a smartphone the fenix 3 provides smart notifications, weather forecasts and more. Available in three style variants, namely Silver, Grey and the premium Sapphire option, which has a scratch-resistant, domed sapphire lens and a linked stainless steel strap.

Available for R7,599 (silver), R8,449 (performer bundle) or R9,999 (sapphire performer bundle).

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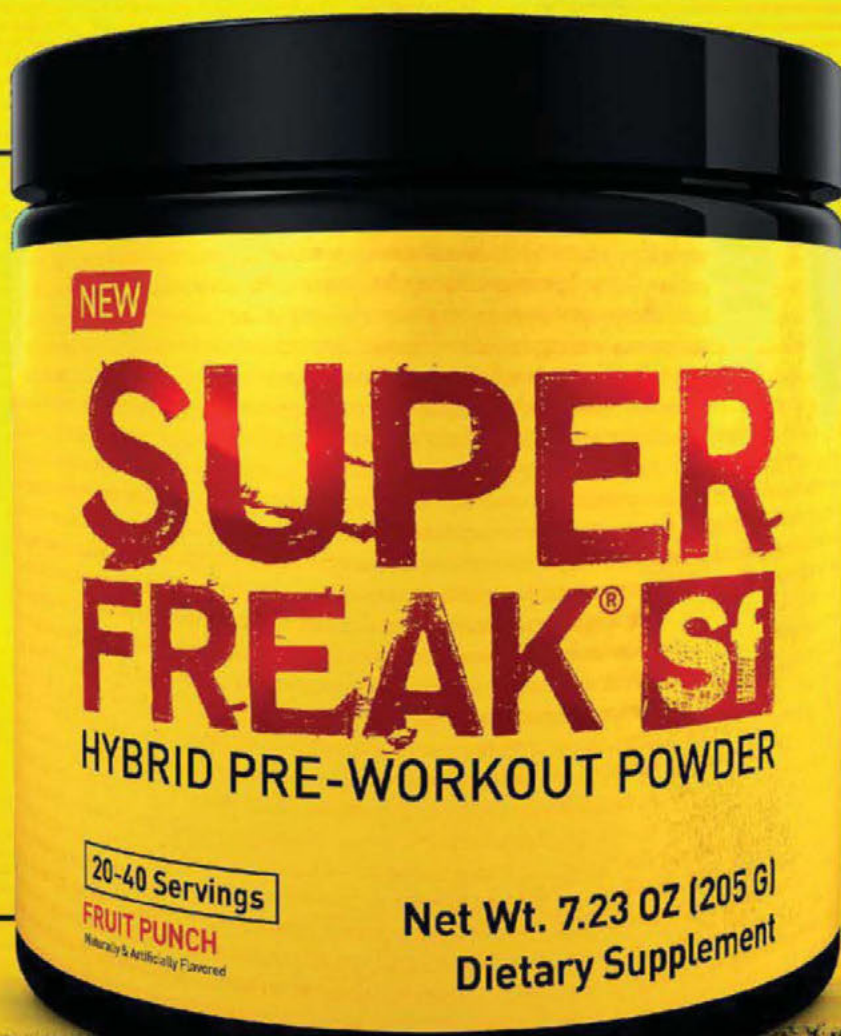
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CHEST DIPS

ADD MORE MUSCLE TO YOUR PECS

This bodyweight movement is considered by many top bodybuilders and coaches to be the ultimate chest exercise for sculpting your pecs.

Starting

Mount a wide parallel bar using an oblique grip (the bar should be diagonal under your palms). Keep your arms straight, with your shoulders aligned above your hands. Bend your knees and hips slightly.

The movement

Lower your body by flexing your elbows. Allow them to flare out to the sides. When a stretch is felt in your chest and/or shoulders, push your body back up until your arms return to the fully extended position. ■

GET MORE GAINS

Squeeze your chest at the top of the movement for a count.

Tilt forward slightly to ensure the emphasis of the movement shifts from the triceps to the pecs.

Increase the intensity by adding weight onto a dip belt. A dumbbell can also be placed between your ankles to increase the resistance.



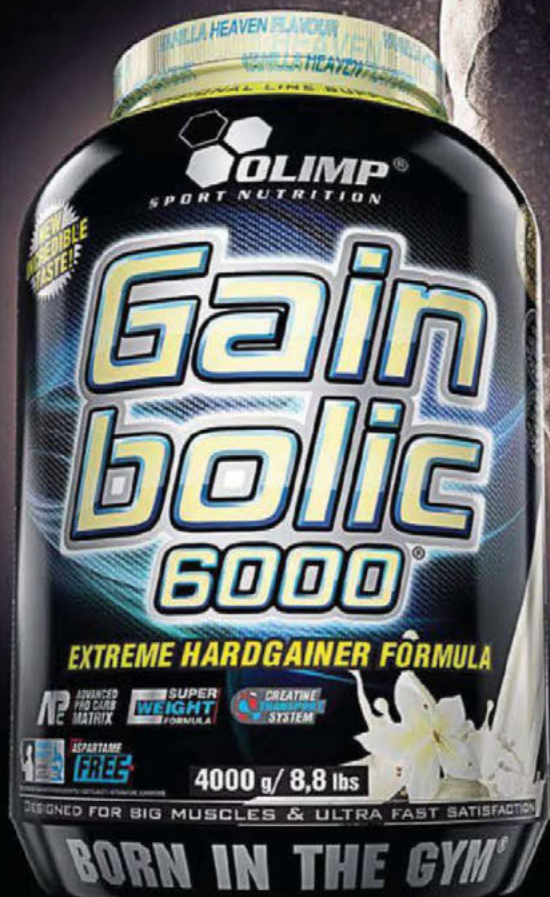
WHY IT WORKS

When bypassing the shoulders, which are normally dominant movers in the bench press but are smaller and weaker than your chest, you're able to place more 'stress' on the pecs. Dips with a wider grip will also help to develop a wider chest, which creates better symmetry and accentuates the tapered X-frame look so many men strive for today.

MUSCLES TARGETED

PRIMARY: Pectoralis major
SYNERGISTS AND STABILISERS: Anterior deltoid, triceps brachii, pectoralis minor, rhomboids, levator scapulae, latissimus dorsi, teres major, trapezius.

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PROVE YOURSELF FIT:

HAND-STAND PUSH-UPS

■ **FORGET THE BICEP CURLS OR BENCH PRESSES, THE HANDSTAND PUSH-UP IS THE NEW WAY TO SHOW YOUR STRENGTH. THIS EXERCISE MAKES OTHER CHALLENGES LIKE ONE-ARM PUSH-UPS, PULL-UPS, AND PISTOL SQUATS LOOK LIKE CHILD'S PLAY. BY TRAINING TO PERFORM THIS FEAT OF ATHLETICISM, YOU'LL ALSO HELP IMPROVE YOUR BALANCE ALONG WITH YOUR SHOULDER AND CORE STRENGTH.**

SOUNDS COMPLICATED?

It's not. We've broken it down into six steps that anyone with sufficient determination and perseverance can master within two to six months, depending on your initial strength.

Best of all? You'll discover a new party trick that will have everyone rushing over to watch - even the quiet guy standing off in the corner.

IN THIS FEATURE YOU'LL FIND TWO KEY AREAS TO FOCUS ON: SHOULDER STRENGTH AND BALANCE. You'll start with step one in each progression, spending five to ten minutes a day doing these and as you get stronger, work your way through the following two steps. By the time you've successfully mastered step three, you'll be ready for the big show.



BOOSTING YOUR BALANCE

**Note that your objective here is to perform each move for 30 seconds straight. Only once you can do this using perfect form, should you move on to the next step.*

STEP 1: CROW STAND

To pad your head and hands, place a mat on the floor about a foot away from the wall. Next, get down on your hands and knees, hands in the centre of the mat, facing the wall.

Rock the body forward slightly, shifting the weight so that it is directly over the hands. Lower the head downward and bring the knees up so that they are resting securely on the elbows. Keep elbows slightly bent, never fully extended. Hold this position for as long as possible using good form.

Repeat for 3-5 reps per session.

STEP 2: TRIPOD HEAD STAND

Assume the same starting position as the crow stand. Next, slowly lower the head to the mat between the hands, keeping the elbows near the side of the body and continue leaning forward until your feet lift off the ground, knees bent.

Plant your knees into your elbows initially and hold this position for as long as possible before losing good form. Eventually you can progress to extended legs.

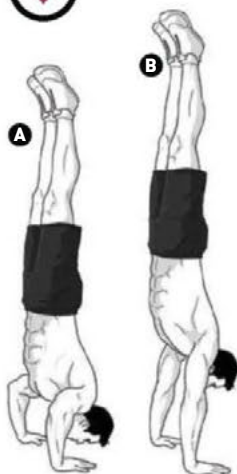
Repeat 3-5 reps each session.

STEP 3: STRAIGHT ARM HANDSTAND

Begin again in the same starting position, only this time slightly closer to the wall. Move into the tripod headstand then slowly, keeping your core tight, extend the legs upward so they are resting against the wall.

Once you've found your balance, push your feet away from the wall until you can do the handstand freely on your own. Hold for as long as possible while using good form.

Repeat for 3-5 reps per session.



STRENGTHENING YOUR SHOULDERS

**For the following exercises, your goal is to perform 10-15 reps with perfect form. Once you're at this level, move forward to the next step.*

STEP 1: PIKE PUSH-UP

Stand upright with the feet slightly wider than hip width apart. Bend over at the waist, keeping the back flat, and place the hands on the ground about two or three feet from your feet (depending on your height). You should be comfortably in a pike position here with the hands slightly wider than shoulder width apart.

From here, slowly bend the elbows as you lower the head down towards the ground moving into a vertical push-up movement pattern. Once as low as you can go, push back up to complete the rep. Look through the legs while you do this, not down to the ground. Complete as many reps as possible using good form.

Repeat 2-3 times per session.

STEP 2: EXERCISE BALL PUSH-UP

Get down on all fours and then place an exercise ball directly under the ankles, bringing your body straight so you are in a plank position, hands placed firmly on the floor about shoulder width apart.

Once balanced, squeeze your core and then lower down as you begin the push-up movement pattern. Continue doing as many reps as possible with good form.

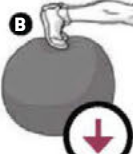
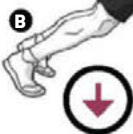
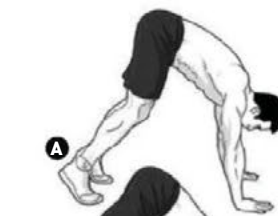
Repeat 2-3 times per session.

STEP 3: WALL PUSH-UP

Assume the straight arm handstand position, leaving the legs resting against the wall. Once here, squeeze the abs to prevent a sway in the spinal column and when ready, slowly begin to lower the head downward, moving through the vertical push-up movement pattern.

Be sure not to hyperextend the elbows on the way up to prevent joint pain. Complete as many reps as you can by using good form.

Repeat 2-3 times per session.



ONCE YOU HAVE MASTERED STEP 3 IN BOTH PROGRESSION SERIES, YOU ARE NOW READY FOR THE MAIN EVENT – THE HANDSTAND PUSH-UP.

NEED-TO-KNOW TIPS AND TRICKS

1 As you move through these exercises, make sure you use a wall whenever possible until you are comfortable to move away from it. If you find yourself struggling with the strength moves, also consider doing some negative reps until you are able to do standard full reps.

2 To increase progress faster, you might consider a drop set progression. Do the exercise you feel confident you can do for 5 reps (hold for 20 seconds) with ease. Rather than continuing at that point, stop the exercise and then perform the progression in the step prior to the one you were just doing. Keep doing that exercise until you cannot do it any longer.

3 Finally, remember to take breaks to allow for strength gains and recovery. Train five out of the seven days a week, leaving two days off for rest and recovery. Balance moves can still be performed on the days off. Additionally, always practice in very open space to ensure maximum safety.

FOLLOW THESE STEPS AND BEFORE YOU KNOW IT, YOU'LL BE PERFORMING YOUR VERY OWN HANDSTAND PUSH-UP. ■



HIIT IS EXERCISE PERFORMED AT A HIGH SPEED OR INTENSITY INTERSPERSED WITH SHORT REST INTERVALS.

STEADY STATE AEROBIC TRAINING CONSISTS OF EXERCISE PERFORMED AT A RELATIVELY CONSTANT SPEED OR INTENSITY FOR AN EXTENDED PERIOD OF TIME.

» By Brandon S. Shaw, PhD, IPAP-AT, Professor at the Department of Sport and Movement Studies, University of Johannesburg

THE GREAT CARDIO DEBATE

What is the most effective form of cardio to crush calories?

HIIT OR STEADY STATE?

IT IS FRIGHTENING THAT 61% OF SOUTH AFRICANS ARE OVERWEIGHT OR OBESE.

These shocking statistics place South Africa third on the rankings of the fattest nations in the world. Also, South Africa has the highest overweight and obesity rate in sub-Saharan Africa, with four out of 10 men carrying excessive levels of fat.

These levels of body fat can increase the risk of many diseases, including diabetes, high blood pressure, stroke, heart disease, arthritis, chronic kidney disease and certain cancers, and when the fat is located around the abdomen, the risk for developing the above diseases is increased even further.

EXERCISE FOR FAT LOSS

While many supplements, drugs, surgeries and gimmicks exist that claim to reduce body fat, the best long-term (and healthy) solutions to reduce excessive body fat remain an increase in your calorie expenditure through exercise, coupled with a decrease in calorie intake through diet.

However, this oversimplification of fat loss is compounding the problem of fat gain in many South Africans, aided by the fact that many researchers and professional athletes alike continue to claim that you "cannot out-train or out-run a bad diet".

While it is true that you

will never out-train a bad diet, it is also true that you will never achieve the physique you desire or attain the performance levels you aspire to by only eating properly. Exercise is an important element in this equation. This is because exercise not only provides numerous benefits, which no supplements, drugs, surgeries, gimmicks or fad diets can, but it also provides long-term benefits to your body composition, depending on how much fat and muscle mass you have and the type of exercise you do. The caveat to that statement though, which often gets lost in the noise, is that a higher dose of exercise is needed to reduce existing excess weight and obesity than is required to prevent weight gain or fat accumulation.

COUNT CARDIO IN

Aerobic exercise in the form of walking, running, rowing, cycling or swimming provides several important benefits over diet-only weight loss and fat loss interventions.

More specifically, aerobic exercise can improve heart function; improve mental health by reducing stress, anxiety and/or depression; helps the immune system respond to mild infections, reducing the chances of contracting certain diseases; increases longevity; improves sleep quality; and it reduces fatigue. Most importantly, aerobic exercise increases cardiorespiratory function, which is a direct determinant of your 'fitness'.

It can also be an effective tool in weight reduction and fat loss, when the correct intensity, volume and duration of training is applied. When it comes to fat loss, aerobic training can take the form of low- to moderate-intensity continuous or steady state aerobic training, or high-intensity interval training (HIIT). But which is better?

THE DEBATE

Steady state aerobic training consists of exercise performed at a relatively constant speed or intensity for an extended period of time, while HIIT is exercise performed at a high speed or intensity interspersed with short rest intervals.

A common notion exists that HIIT is best for fat loss. However, there is currently a lack of scientific research about the effects of HIIT on body composition, relative to the effects of steady state aerobic exercise training.

Although steady state aerobic exercise has undoubtedly proven effective in the long-term management of weight or fat loss, many studies have indicated that HIIT may be more effective than steady state aerobic exercise in reducing body mass, trunk fat, and waist circumference in normal weight, overweight and obese adolescents and adults. In addition, the benefits gained from HIIT are especially important since the adaptations to HIIT appear with considerably less (50-60%) exercise time than required from steady state exercise, making it perfect for those

with limited time to exercise.

However, HIIT may not be the best option in a real-world setting for the elderly and overweight or obese individuals, and those just starting to exercise, because of the risks associated with high exercise workloads. In addition, when it comes to fat loss and body composition in the long-term, steady state aerobic exercise has been proven to be equally effective to HIIT at reducing body weight and body fat following aerobic exercise irrespective of intensity (as long as the intensity ranges from moderate to vigorous), with slightly more weight loss being found in those who exercise longer per week.

A higher dose of exercise is needed to reduce existing excess weight and obesity.

HIIT PLACES GREATER STRESSES AND RECOVERY DEMANDS ON THE BODY. This can lead to slower recovery and increased injury risk, both during and after HIIT.

THE BEST APPROACH

The question then is, should you remove steady state exercise completely from your programme?

Even though it is well-known that HIIT is more effective than steady state aerobic exercise in the short-term, it is important not to discard steady state aerobic exercise completely. This is so because HIIT places greater stresses and recovery demands on the body. This can lead to slower recovery and

increased injury risk, both during and after HIIT. So, by doing steady state aerobic training (along with

well-planned HIIT sessions) an individual will recover faster from steady state training and be able to perform more of those sessions than HIIT.

In addition, these steady state training sessions may actually facilitate recovery from HIIT by increasing blood flow and nutrients to the muscle tissue damaged during HIIT (and other forms of training). Too much HIIT combined with additional exercise training and restrictive diets can also result in a loss in muscle mass. This is problematic because muscle mass is critical to maintaining metabolism and burn fat during the 21-23 hours when an individual is not training.

Furthermore, HIIT may also not be appropriate for

beginners because HIIT may be too stressful for such an individual. In these individuals, steady state is a much better and safer option to lose fat and improve cardiorespiratory fitness for an appropriate base in anticipation of HIIT training, provided diet is correct (total calorie intake and macronutrient ratios).

Also, in many cases, if exercise is too hard, which is often the case with HIIT, individuals might avoid exercise completely. It is therefore better to perform steady state exercise the majority of time (when time allows) and HIIT on days when the individual is physically and mentally prepared for it. ■

So, while it is true that an individual cannot out-train a bad diet, it is also true that an individual cannot simply eat themselves to good health, and much less, attain a great looking body. For that, individuals need to eat and exercise properly. ■

>> BY WERNER BEUKES, DEPUTY EDITOR

BODY BEAT

WHEN AND HOW MUSIC SHOULD BE INCORPORATED INTO YOUR ACTIVE LIFESTYLE

If the clanking of weight plates, the drone of high tempo spinning classes and the reception manager's selection of the latest EDM compilation isn't creating the atmosphere you'd like to train in then perhaps you're one of the growing number of people who choose to exercise with head or earphones while listening to your favourite hit list.

An article published on the Scientific American website dated 20 March 2013 states: "Many people depend on bumpin' beats and stirring lyrics to keep themselves motivated when exercising." While this is an ideal method to 'tune out' the world and focus on your training, the right type of music during exercise may do more than merely give your routine a motivating soundtrack.

American investigator Leonard Ayres found that cyclists pedalled faster while a band was playing than when it was not.

Accordingly, it is no secret that when listening to music, people run farther, swim faster, lift heavier and bike longer than usual – in many cases without realising it. In a 2012 review of research, Costas Karageorghis of Brunel University of London, one of the world's leading experts on the psychology of exercise music, wrote that one could think of music as "a type of legal performance-enhancing drug".

Can music then be a drug? When asked this question, Shaw agrees that music can be a drug in the right athlete, in the right sport and under the right conditions. "In many individuals this is also not true since some research has also shown that music, especially at maximal intensities, may not be able to override an individual's physiological limitations."

According to Shaw music can be used either to stimulate or calm an individual down prior to physical exertion. Some sports (i.e. contact sports) require an individual to be very psyched up and others require them to be calm (i.e. golf) and even in those sports some individuals have a different optimum level of arousal or stress.

"We see this in the gym where one individual

HARDER, EASIER, LONGER

In a 2012 study of 184 college students' usage of their personal music players during exercise in America, conducted by David Barney, Anita Gust and Gary Liguori from the International Council for Health, Physical Education, Recreation, Sport and Dance, the most common reasons to listen to their music were "to work out harder" (22,4 percent), "make the exercise seem easier" (21,4 percent) and "to work out longer" (20,2 percent). In the same study, the most common modes of exercise while listening to music were free weights (27,2 percent), treadmill (26 percent), machine weights (19,6 percent) and the elliptical trainer (17, 4 percent).

PERFORMANCE ENHANCER

Prof. Ina Shaw, PhD, a professor in Biokinetics from Monash University, says research has shown that music definitely has the potential to make an individual's energy utilisation more efficient while they are training.

"This is believed to occur when a person synchronises their movements during aerobic-type movement (running, walking, rowing, etc.) with music," says Shaw. She also indicates that by-product molecules (i.e. acidosis and elevated hormones) of high-intensity exercise which contribute to fatigue may somehow be lessened by music.

Research on the interplay of music and exercise dates back as far as 1911 when

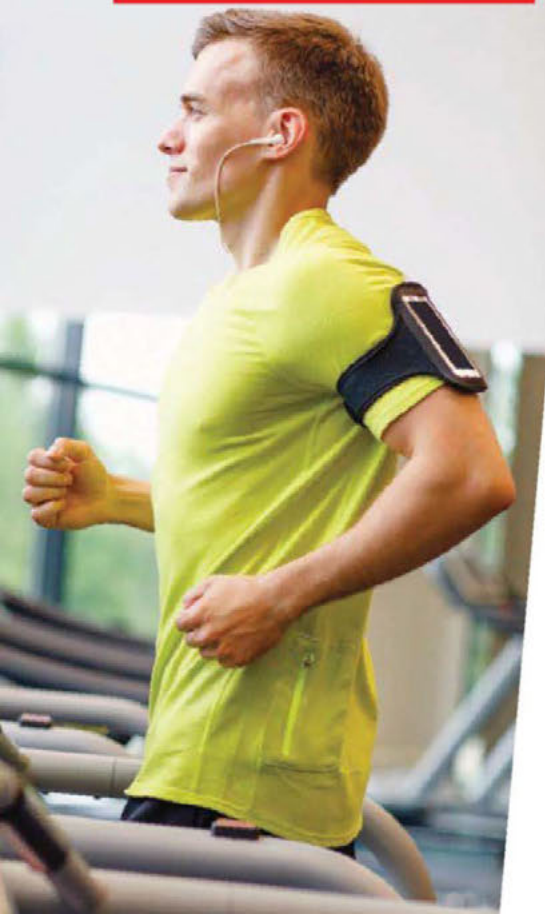
favours quiet or relaxed music and another favours hardcore, loud music. However, a good tip for selecting music for a workout is to find preferential music that has a similar amount of beats per minute to the heart rate that you expect and that you want during the exercise you are going to do. So when planning the exercises for your programme, it is essential to give thoughtful preparation to your music organisation and make sure that songs blend into a continuous mix," says Shaw.

In fact, music has the potential to offer such a boost to performance that the USATF (the governing body of distance races in the USA) banned the use of portable music devices in its sanctioned events in 2007. Subsequently officials at the 2007 Twin Cities Marathon disqualified 144 runners for infringing on the rule. The USATF has since amended the ban and it now only applies to runners contending for prizes in championships, but the fact remains that music has the potential to boost performance.

TYPES OF MUSIC

In a snap survey among Jo'burgers who work out, fast songs with strong beats fill most workout playlists.

People in general prefer to listen to hip-hop, rock and pop while working up a sweat.



MIND MANIP

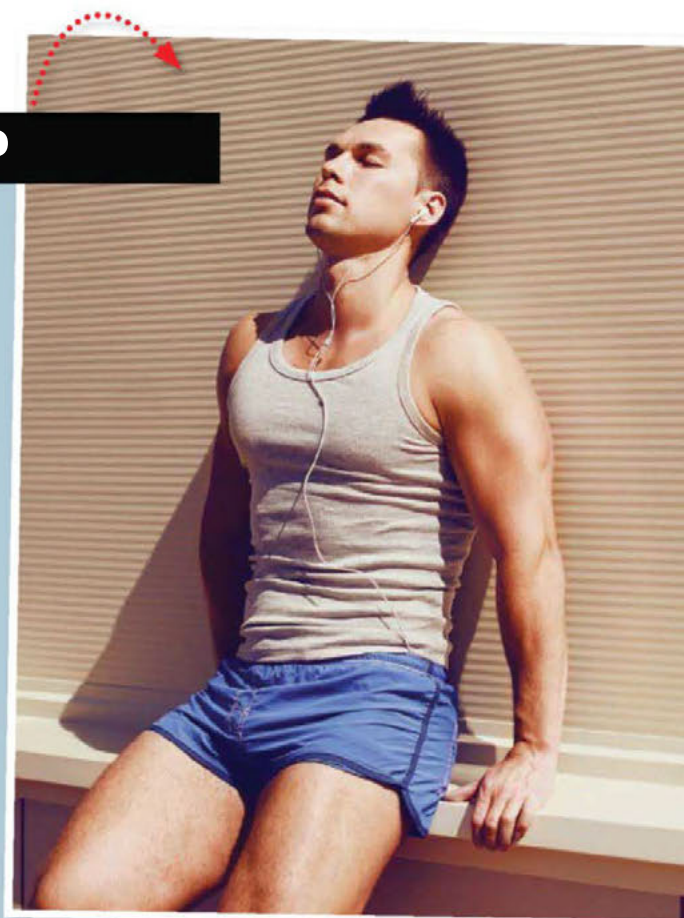
Research has indicated six key ways in which music can influence the mind in preparation for optimum physical exertion:

1) DISSOCIATION: This refers to a diversionary technique which lowers perceptions of effort. As such, music narrows a person's attention and diverts their mind away from sensations of fatigue and may even promote a positive mood during the physical exertion, while suppressing negative emotions such as tension, depression and anger. However, this effect is only true for low and moderate exercise intensities because at high intensities, perceptions of fatigue from physiological feedback (i.e. heart rate, breathing rate, etc.) override the impact of music. However, music may still improve the experience of high-intensity exercise and make it seem fun.

2) AROUSAL REGULATION: Interestingly, music can be used either to stimulate or calm anxious feelings before physical exertion. Loud, upbeat or fast-tempo music can be used to 'psych-up,' while softer, down- or slow-tempo music can help to 'psych-down' an athlete.

3) SYNCHRONISATION: The synchronisation of music with repetitive (aerobic) exercise is associated with increased levels of performance. This is because musical tempo can regulate movement, prolonging performance.

4) ACQUISITION OF MOTOR SKILLS: Think artistic sports such as gymnastics which are performed to music. Music can assist in the acquisition of motor skills since music replicates forms of bodily rhythm and many aspects of human locomotion. Music makes the learning environment more fun, increasing an individual's intrinsic motivation to master essential skills. In addition, it is thought that motor control enrichment from auditory rhythmic stimuli probably affects motor effectors in the cortex of the brain, or at the spinal level.



5) ATTAINMENT OF FLOW: The most common and logical effect of listening to music (especially personally chosen music on headphones) is that music may help in the attainment of flow, a Zen-like state that internally motivates a person during physical exertion.

6) NEUROCHEMICAL RESPONSE: The intense pleasure experienced when listening to music is associated with dopamine activity, a neurotransmitter that plays a role in underlying pleasurable reactions, in the mesolimbic reward system. As such, the euphoric 'highs' from music are neurochemically reinforced by the brain so people keep coming back to it.

LOUD, UPBEAT OR FAST-TEMPO MUSIC CAN BE USED TO 'PSYCH-UP,' WHILE SOFTER, DOWN- OR SLOW-TEMPO MUSIC CAN HELP TO 'PSYCH-DOWN' AN ATHLETE.

SHAW EXPANDS MORE ON CONCERNS AND OUTLINES NEGATIVES WHILE TRAINING WITH HEADPHONES:

1. Wearing headphones can damage or impair your hearing:

In addition to the damage it may cause to your hearing, if the music is too loud and the headphones muffle outside sounds, there is a risk of danger in that if you are exercising outdoors you may not hear an approaching motor vehicle and cannot move out of the way.

2. Headphones and listening devices can distract you from your workout:

While individuals are toying with their headphones and listening devices (i.e. adjusting wires, adjusting the fit, etc.), they are not paying attention to their surroundings or the control required for a movement or exercise, which may result in an unnecessary injury from a fall, twisting an ankle, over-stretching a muscle or dropping a weight. Also, listening to music during a workout can make you go too fast or too slow and that could eliminate the benefits of training.

3. Other senses are minimised if you wear a headset: When you wear a headset, you may not see or hear dangerous objects or situations around you.

4. Headphones limit social contact:

Although many athletes and gym-goers expect to be left alone when training or competing, many individuals take part in sport and exercise for the social benefits. If they want to meet they can ditch the headphones, but if you want to be alone, headphones are a great excuse for people not to approach you.

5. Music can sabotage your performance:

It is important to train regularly in 'race conditions'. As many races do not allow the use of music during an event by listening to music while training you put yourself at a disadvantage since you will be unfamiliar with your state without music. If you want to set yourself up for success, match your training to the conditions of your competition day, including what your ears hear.

6. Develops a dependence: Shaw believes that one could become too dependent on music to complete workouts. People who might have a music addiction would be more defensive about their music usage. If you are one of those people similar principles apply to that of overcoming any addiction. There are a few ways in which to overcome a music addiction:

- **Set a target:** Try to progressively reduce the time spent listening to music, but be realistic. Once you finally reach your target, set a new one.

- **Get rid of your earphones:** Waking up every day and seeing your iPod and earphones is only going to tempt you. This way you won't be able to get them without having to dig them out.

- **Remember what really matters:** Remember the health benefits and consequences of listening to music while training or competing and performance required for competition.



The takeaway message is that music can be a highly effective tool used to boost performance or alleviate boredom while lifting weights, running, or cycling. Just don't rely on it in every workout though; rather use it for periods when you want to reach peak performance or need some extra motivation to complete a killer workout. ■

PERFORMANCE PRODUCTS



Yurbuds sport earphones

Ergonomic design features includes a TwistLock function that twists and locks the Yurbuds into place for a secure fit. Silicone earbuds are ergonomically designed to avoid nerve-rich areas of the ear and are soft and comfortable. The range is also sweat and water resistant. A water resistant three-button control and microphone controls music and calls on the iPhone, iPod and iPad.

Bose SoundSport™ in-ear headphones

SoundSport headphones are sweat-resistant and StayHear tips conform securely and comfortably to an ear's shape. An inline mic and remote lets you easily control volume, skip tracks and take calls. TriPort® headphone technology produces wide-range sound.

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WBFF pro and USN Ambassador **Jacques Fagan** enjoys listening to *Thunderstruck* by ACDC, American rapper Flo Rida's *Good Feeling*, *Million Voices* by Swedish DJ Otto Knows and Example's *Change the way you kiss me*. Fagan says these songs are brilliant because they get him focused on the task at hand and put him in the right frame of mind to smash the weights during his workouts. Apart from blood-pumping music, Fagan also regularly listens to motivational books and audio clips on his iPod.



Rudi Pretorius, WBFF competitor and Evox-sponsored athlete, listens to American rapper Eminem's *Till I collapse*. "It's old school, but it is a track that pumps adrenaline and helps you find the power you didn't think you had! Skrillex featuring ASAP Rocky - *Wild for the night* is still one of my ultimate feel-good songs for training." For cardio Pretorius enjoys listening to Steve Aoki featuring Chris Lake and Tjnamo - *Boneless*. Pretorius says this song always seems to lift his spirit when he needs it most during cardio.



Philips SHQ1200 ActionFit earphones

Offer a secure and comfortable fit, with anti-slip rubber ear caps that keep the earphones in. Three ear cap sizes are available for optimal fit. The kevlar-reinforced cable offers durability and a cable clip and protective pouch for easy use and storage are included. Sweat resistant and rain proof.

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Beats by Dre Powerbeats2 Wireless

The headphones are compact and lightweight, and come with flexible ear hooks that provide a comfortable and secure fit. The headphones also pair easily with Bluetooth-enabled devices, and have a no-slip grip inline mic for remote calls, as well as a rechargeable 6-hour battery. They are also sweat and water resistant.



Jabra Sport Pulse Wireless earphones

Offer an integrated heart rate monitor, and a compatible Sport Life App. The Dolby-enhanced wireless sound experience includes sound and real-time voice coaching through the Sport Life App. The earphones are lightweight, and sweat and rain proof. The 'Ergonomic Audio Response Science' technology ensures a secure and comfortable fit.



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» B Pedro van Gaalen, Editor

**WHY MORE
OF US SHOULD
TRAIN FOR
'THE BURN'
MORE OFTEN**

MYTH BUSTING:

LACTIC ACID

LACTIC ACID IS A TERM THAT STRIKES FEAR INTO THE HEARTS OF MANY ATHLETES, FROM GYM-GOERS TO ENDURANCE ATHLETES ALIKE. HOWEVER, IT IS ONE OF THE MOST MISUNDERSTOOD CHEMICAL COMPOUNDS PRODUCED BY THE BODY, AND OUR GENERAL UNDERSTANDING OF THE ROLE IT PLAYS IN EXERCISE PERFORMANCE HAS BEEN SHAPED BY A GREAT DEAL OF 'BRO-SCIENCE' AND MISCONCEPTION.

In the case of lactic acid, the physique-conscious among us have been part of a relatively small group of recreational athletes who actively choose to chase 'the burn', to induce those sleeve-splitting pumps, in spite of the fact that conventional health and fitness wisdom held that lactic acid was merely an undesirable, rate limiting by-product of exercise.

WHAT THE BROS SAY

As the bro-science goes, that 'burn' is generally attributed to the accumulation of lactic acid. While that is not technically incorrect, the term lactic acid isn't that accurate. What actually happens is the accumulation of lactate and hydrogen ions, and it is the hydrogen that creates a more acidic state that results in the 'burn'.

Another common misconception has been that training at this intensity increases the extent of next day muscle soreness, or DOMS. Contrary to this popular belief, lactic acid build-up is not responsible for the muscle soreness felt following intense or strenuous exercise. Researchers who have examined lactate levels

immediately after exercise found little correlation with the level of next-day muscle soreness experienced.

While the precise cause of DOMS is still unknown, most research points to the damage and micro-trauma that happens to muscle cells and the elevated release of various metabolites into the tissue surrounding the muscle cells, which results in an

inflammatory response.

Where the bro-science seems to be correct though is the idea that there are numerous benefits to be gained from training at or above your lactate threshold (LT) – the point during training when the intensity of exercise leads to the accumulation of lactate and hydrogen ions in the body above a certain point.

**"LACTIC ACID PLAYS AN
IMPORTANT ROLE IN ENERGY
PRODUCTION DURING HIGH
INTENSITY EXERCISE AND
HELPS TO BOOST THE ANABOLIC
HORMONAL CASCADE THAT
RESULTS AFTER INTENSE
TRAINING."**

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According to research published by Astrand et al. in 1986, the normal amount of lactic acid circulating in the blood is about 1-2 millimoles/litre of blood. The onset of blood lactate accumulation (OBLA) occurs between 2-4 millimoles/litre of blood.

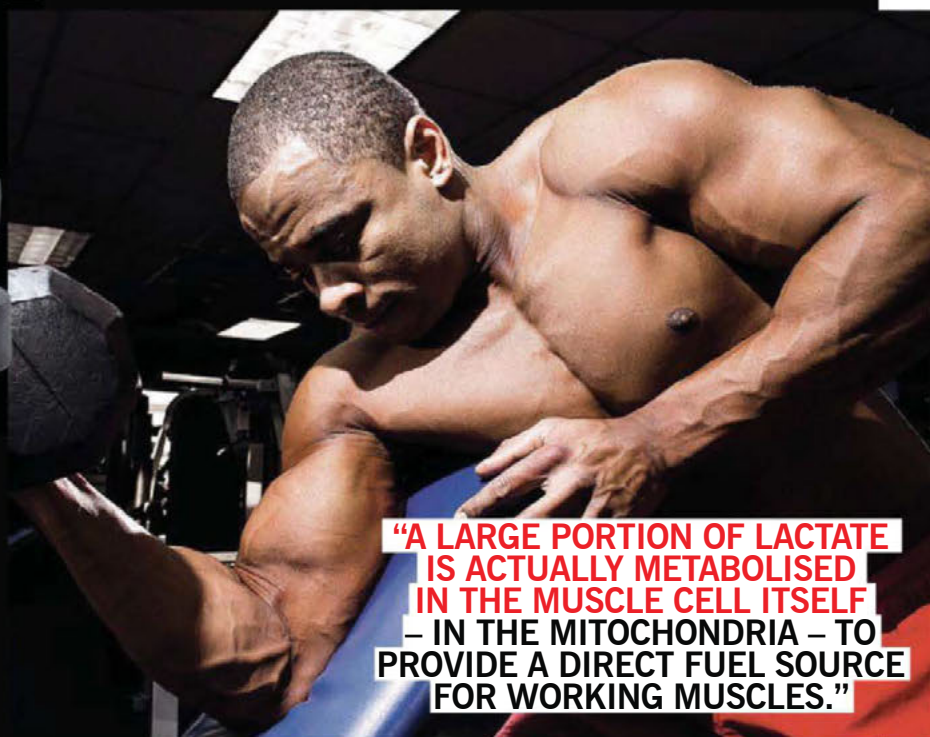
THE SCIENCE STUFF

While the reasoning for this approach to training may not have always been sound, we now know that lactic acid – lactate to be more specific – is not an undesirable by-product of exercise. In fact, it plays an important role in energy production during high intensity exercise and helps to boost the anabolic hormonal cascade that results after intense training. More interestingly though it seems that lactate actually helps to extend the time to muscular fatigue, rather than cause it.

As we established in a previous article published in this magazine on threshold training (Fitness His Edition Jan/Feb 2015. Available on iTunes, Zinio and Magzter), your LT is the point during exercise when the intensity of your effort forces your body to switch from aerobic to anaerobic metabolism to sustain that activity, and lactate plays an important role in energy production in the absence of oxygen.

That article outlined the major benefit of training above your LT for those who lift weights, be it to develop bigger or stronger muscles, which is the effect this type of training has on the production of the key anabolic hormones – testosterone and human growth hormone (hGH).

ENERGY PRODUCTION



“A LARGE PORTION OF LACTATE IS ACTUALLY METABOLISED IN THE MUSCLE CELL ITSELF – IN THE MITOCHONDRIA – TO PROVIDE A DIRECT FUEL SOURCE FOR WORKING MUSCLES.”

The other important aspect of lactic acid worth discussing further is the role it plays in energy production. Lactate is resynthesized by the liver to form more glucose during anaerobic exercise, which effectively provides working muscles with more energy. Some of the lactate produced is also released into the blood stream and used directly as a fuel by cardiac muscle. More importantly though, more recent research has shown that a large portion of lactate is actually metabolised in the muscle cell itself – in the mitochondria – to provide a direct fuel source for working muscles. As such, lactate has both a direct and indirect effect on energy production during intense exercise.

Furthermore, lactate accumulation in muscle tissue also seems to delay fatigue by mitigating the effects of depolarisation, a change in ion concentrations on either

side of the muscle cell wall that initiates a contraction of muscle fibres by creating an action potential. As muscle contractions are regulated by calcium ion concentrations an acute change in the concentrations during prolonged and/or intense exercise eventually contributes to the decline of performance.

The accumulation of lactate in muscle tissue during intense exercise partly counteracts the effect of depolarisation. More specifically, studies on rats have shown that lactic acid can improve excitability and function of depolarised muscle fibres. Another series of studies conducted by Ole Nielsen of the University of Aarhus in Denmark have also shown that high levels of lactate partially restore muscle cell function from a depolarised state.

And a final point worth noting is the fact that lactate plays a central role in the body's adaptive response to exercise.

Without it there wouldn't be the same compensatory response to intense training as is experienced when doing HIIT-type training of any kind. This exercise response is said to stimulate a phenomenon called mitochondrial biogenesis, which increases the concentration of mitochondria inside muscle cells making you more efficient at energy production, be it from glucose, fat or ATP. It is one of the most important adaptations to training for improved performance and enhanced metabolic function, which have applications in both sport and physique development.

As such, this article hopes to drive home the point made in our previous feature on threshold training, that training for the burn – at or above your LT – at least some of the time, is a good idea, and that lactic acid production is something that should be embraced and actively pursued instead of feared and avoided. ■



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Weider Nutrition South Africa

» By Pedro van Gaalen, Editor
» Images by Cindy Ellis

DYLAN DAWSON

■ Gunning to become South Africa's next WBFF Muscle Model pro

ON THE EVE of the highly anticipated 2015 WBFF South Africa show we caught up with one of the leading contenders and hopefuls for the highly competitive Muscle Model category. With four South African WBFF pros coming from this line-up already Dylan Dawson has his sights firmly set on making his mark on the international stage.

Tell us a bit about yourself.

I'm currently a personal trainer at Virgin Active Broadacres. My interests lie in all things fitness, I eat sleep and breathe this lifestyle.

How did you get involved in the fitness industry?

Throughout school I was an extremely active kid, taking part in most of the sports the school had to offer. After excelling at swimming I decided to put all my efforts into that discipline and was awarded my South African school colours. With all the gym work that went in to being a competitive swimmer I ended up enjoying my time in the

ATHLETE PROFILE

Born: Durban

Lives: Broadacres, Johannesburg

Qualifications: Diploma in exercise science (HFPA)

Occupation: Personal trainer

Age: 21

Height: 1.80m

Competition weight: 89kg

Off-season weight: 100kg

Sponsors:

■ USN

■ Aesthetix Era

■ Vibram

📍 Dylan Dawson - Professional Trainer & Muscle Model

📧 DylDaws01

"I often don't have the time to sit down and have a proper meal, so **having a shake on hand is essential for me** to get in all my daily macronutrients."

“When I first started training I didn’t give much thought to getting up on stage in a small pair of hot pants and flexing to a crowd of a thousand strangers.”

gym more than my time in the pool. Before I knew it I had hung up my swimming trunks and got into the gym and gave it everything I had. If I wasn’t in the gym I was researching training and dieting advice on the net and started incorporating what I had read into my approach. The results were amazing and I was hooked.

What was it that first attracted you to the industry and the competitive stage?

Growing up I was quite a shy guy, so when I first started training I didn’t give much thought to getting up on stage in a small pair of hot pants and flexing to a crowd of a thousand strangers. However, after watching the first WBFF show to hit our shores in 2013 I was completely blown away and my opinion changed immediately. I knew then that this is what I wanted to do.

When did you achieve your best conditioning to date and how did you do it?

Ahead of the 2015 WBFF SA show I was in my best condition ever. I have never worked so hard and pushed my body to the absolute limit like I did this year. Most days consisted of two training sessions per day, not including my fasted cardio every morning.

What does your average diet consist of?

My carbs consist of brown and white basmati rice, sweet potato, oats and wholewheat pasta in the off-season. My main protein sources include beef, salmon, chicken breasts, eggs, and whey protein.

In terms of fat, I stick to avocado and almonds. I don’t eat many fats as my protein sources contain sufficient amounts.

Where do you source information from or educate yourself on training and nutrition?

I am constantly on the Internet researching or reading magazine articles on latest training and nutrition information. However, I would say that the majority of my knowledge comes from my coach and my friends who have already been in the industry for years.

How important are supplements in your eating plan?

Supplements are incredibly important. As a personal trainer I often don’t have the time to sit down and have a proper meal, so having a shake on hand is essential for me to get in all my daily macronutrients. Also, some supplements

offer certain benefits that whole foods wouldn’t.

What does your daily supplement plan look like?

- USN Amino Gro taken upon waking, and before and during workouts,
- USN Whey Isolate with meal one and after training,
- USN Casein before bed,
- USN Men’s ultra taken once daily,
- USN Omega 3 and CLA.

How strict is your diet in the lead up to a show or competition?

It is extremely strict. There are no simple sugars or cheat meals allowed, unless otherwise specified from my coach.

How else do you prepare for shows and competitions?

I practice my posing and routine on a daily basis a few weeks before stepping on stage.

What are your future ambitions in life and in the sport?

My aim is to receive my WBFF pro card and go over to Las Vegas to compete against the top Muscle Models in the world, and ultimately become the World Champion.

DYLAN ON TRAINING

What does your normal training programme look like?

- **Mon:** Shoulders
- **Tue:** Chest
- **Wed:** Back
- **Thu:** Hamstrings and calves
- **Fri:** Arms and abs
- **Sat:** Chest in the morning and rear delts in the afternoon.

■ **Sun:** Quads and calves
I take my rest days when I feel my body needs it.

What is your toughest workout?

Definitely the quads session I did two weeks out from WBFF SA 2015. It consisted of:

Leg extensions <i>using slow eccentric movements</i>	6 x 15-12
Leg presses <i>going up in weight every two sets with last set being a drop set</i>	8 x 15-10
Smith machine squats	4 x 12
One legged split squats	3 x 10/side

What are your top training tips?

Be consistent and dedicated with your training. Try new training techniques and programmes to find what works best for your body. ■

QUICK FACTS

Favourite music to train to?
Deep/Techno house

Favourite exercise?
Bench press

Favourite cheat meal?
2 large burgers and sweet potato fries, finished off with a slice of cake.

What’s in your gym bag?
Protein shake, BCAAs, straps, weight belt and headphones.

What do you do to relax?
Dinner and movies at home with my beautiful girlfriend.





MAKE EXPLOSIVE GAINS!

**Add Landmine training to your programme
for an explosive full-body workout**

» By Pedro van Gaalen, Editor » Photography by Cindy Ellis » Performed by Rudi Strydom

TOTAL BODY LANDMINE CIRCUIT

1 ROUND

EXERCISE	REPS
Landmine front squat with push press	15
Landmine two-arm row (T-bar row)	15
Landmine reverse lunge	15
Kneeling shoulder press	15
One-arm bent-over landmine row	15
Landmine sumo squat	15
Lying one-arm press	15
Standing knee drive	15
Woodchops	15
Landmine burpees	15

Perform one set of each exercise directly after the other, with no rest between exercises. Rest after completing one round, then repeat 3-4 times.

THE LANDMINE is an inconspicuous piece of equipment that most of us would fail to notice in our local gym. However, this innovative tool is one of the most effective pieces of equipment to deliver total-body conditioning.

Normally attached to the bottom of large rigs or frames in your gym, or a standalone anchor as depicted in this workout feature, a landmine is basically a ground-based rotational training device with a sleeve attachment that can accommodate one end of an Olympic bar.

THE BENEFITS

The fact that one end is anchored to the floor delivers various benefits. Firstly, it allows you to work with heavy free weights in a more controlled manner which means it is generally safer.

Having an anchor point also promotes an arching movement, as opposed to a linear movement, which is beneficial for training complex joint structures such as your shoulders and hips.

It is also a great tool to add variety to a workout, and it lets you complete an entire workout with just one piece of equipment, making it the ideal solution to packed gyms and long lines at your favourite machines.

From a functional perspective, the rotational nature of the device also incorporates your trunk muscles and core stabilisers in many of the movements, which delivers an added benefit to every rep.

So, if you're looking for a new challenge, a quick way to get in a full-body workout, or an effective programme to take your physique or performance to the next level, landmine training is the ideal option for you.

EXERCISE GUIDE



LANDMINE FRONT SQUAT WITH PUSH PRESS

Stand upright and hold the anchored barbell with two hands at chest height. Perform a squat. As you reach the top of the squat movement press the barbell overhead. Return the bar to chest height and repeat for the required reps.

■ LANDMINE TWO-ARM ROW (T-BAR ROW)

Attach a handle attachment to the bar if one is available (pictured) and load a weight plate on the free end. Step over the barbell and face away from the landmine or anchor point. Squat down slightly and lean forward. Grab the handles in both hands, or hold the barbell below the plate with a staggered grip, and push your butt back. With your arms fully extended below you, maintain a flat back as you row the bar up to your chest. Lower the bar back down to the starting position under control and repeat for the required reps. Do not set the barbell down between reps.

FORM TIP: Drive your elbows back, don't shrug your shoulders!



FORM TIP: Step back far enough that the knee of your front leg does not extend over the toes of your front foot.



■ LANDMINE REVERSE LUNGE

Holding the free end of an anchored barbell at shoulder height with two hands, take a large step back with one leg to perform a reverse lunge. Drop the knee of your rear foot almost to the ground. Extend your knee and hip and return your foot to the starting position. Alternate sides until you complete the required reps.

■ KNEELING SHOULDER PRESS

Kneel in front of the anchored barbell and grip the free end with one hand. Press it up and overhead to perform one rep. Complete the required reps on one side then swap sides.

ALTERNATIVE MOVE: Perform the one arm shoulder press in a standing position.

A



B

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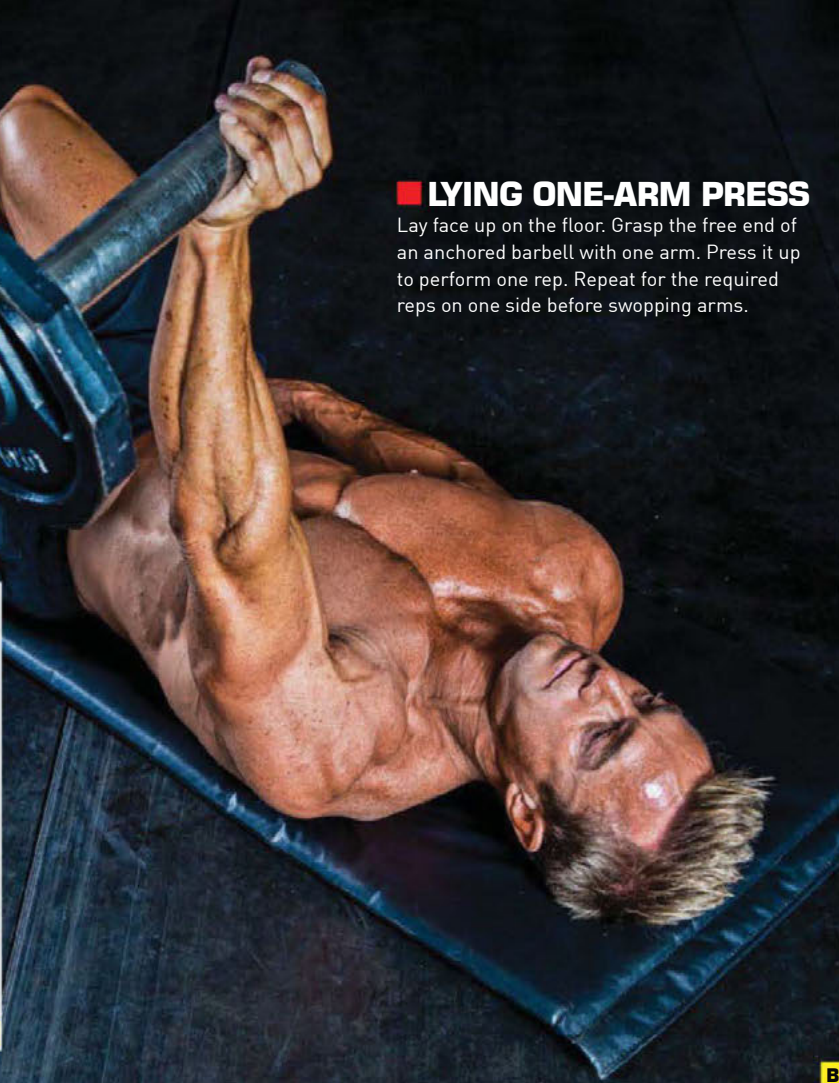
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FORM TIP: Brace your core to stabilise your body and limit trunk rotation during the lift.

■ LYING ONE-ARM PRESS

Lay face up on the floor. Grasp the free end of an anchored barbell with one arm. Press it up to perform one rep. Repeat for the required reps on one side before swapping arms.



■ ONE-ARM BENT-OVER LANDMINE ROW (AKA MEADOW'S ROW)

Stand side on to an anchored barbell. Grasp the end of the barbell with the hand closest to it. Hinge at the hips and bend over. Row the barbell up to your shoulder and then back down. Perform the required reps before changing sides.



■ LANDMINE SUMO SQUAT

Stand over the free end of the barbell facing the landmine with a wide stance and your toes pointing slightly outward. Squat down and grasp the barbell with both hands. Stand up keeping your arms extended below you and the barbell between your legs. Perform a sumo squat by squatting down until your upper legs are at least parallel to the floor. Return to the starting position and repeat for the required reps.



A

FORM TIP:
Keep your chest up and your knees out in the deep squat position.



B

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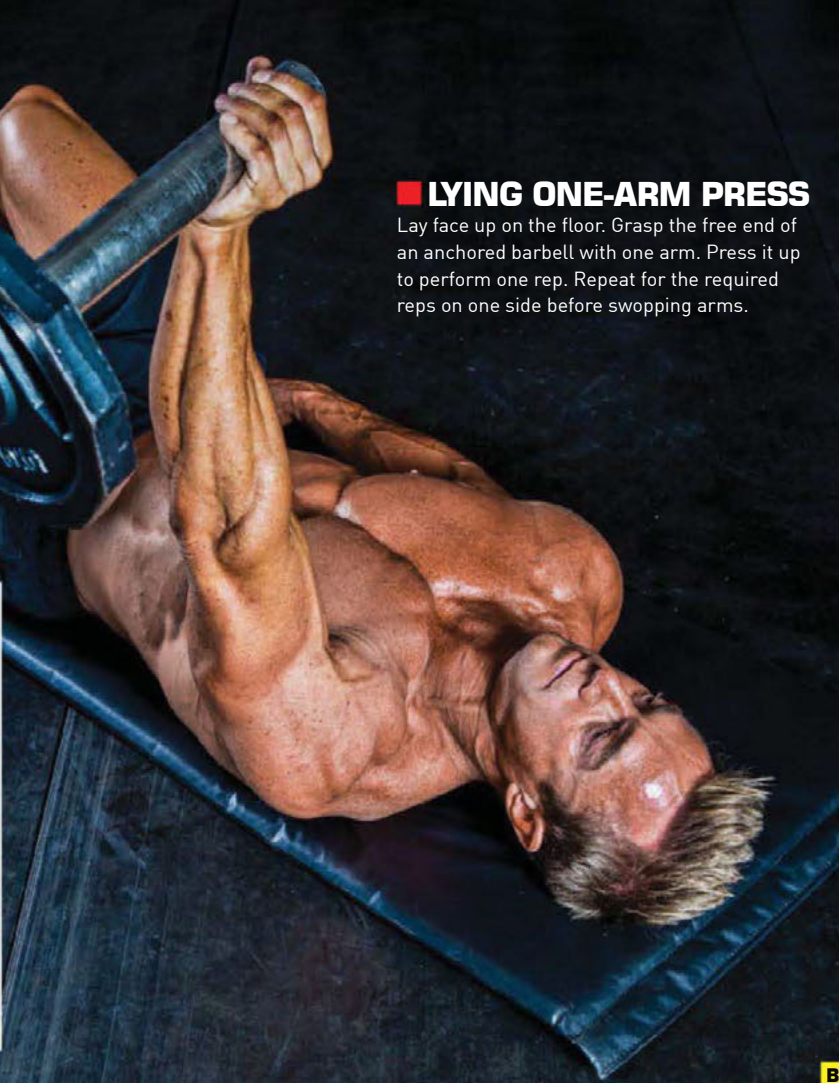
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A

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POST-EVENT DEPRESSION

DON'T BECOME A VICTIM OF THE POST-RACE BLUES

There are few things in life as rewarding as overcoming a seemingly insurmountable physical challenge. Months spent preparing – training and eating according to a meticulous plan – culminates in the euphoria of crossing the finish line or achieving your competitive goals on the big day.

However, not soon after – a day or two for some, mere hours for others – it suddenly dawns on you: “What next?” That’s when the feelings of accomplishment and elation give way to anxiety and, in many instances, some degree of depression.

POST-EVENT DEPRO

Post-event depression is an interesting phenomenon that’s not unique to racing, according to Clinton Gahwiler, a psychologist at the Sports Science Institute of South Africa. “There is a definite tendency for us to generate the energy, inspiration and motivation necessary to complete a task, but only to completing the task. Thereafter all these things ‘dry up’ which is why we collapse just as we achieve a deadline, for example.”

Often referred to as post-race depression in sporting circles, or post-marathon depression in the obsessive world of long-distance running, this is a well-documented and researched phenomenon that seems to have both physiological and emotional roots.

Dr Andrew Lewis, an educational psychologist specialising in sport psychology, with practices in Stellenbosch and Somerset West in the Western Cape, defines

the condition more broadly. “It translates into every aspect of life. You work to a goal and put in so much time and effort, and everything is shaped around this event. You achieve it and feel great for a time, but then the endorphin rush drops and, all of a sudden, the proverbial mat is pulled from beneath you.”

To put it into context, Dr Lewis shares his experience after completing his doctorate. “I landed up in hospital because my back gave in. You see, **your** back is the focal point of **your** body and emotions play into it which is why this can sometimes happen. The body’s immune system also drops as the physical stress is no longer there. This is when your body ‘crashes’, which can manifest as burn out or major depression.”

While these are severe cases, Dr Lewis warns that most people will go through a mild state of depression or a low as part of the post-race blues, even professional athletes. “While it is less prevalent when related to a specific event among pro athletes I have seen some big names in my sport psych practice as they also go through hard times. In general though I see the severe cases in people who do one large event a year, like Ironman or Comrades, and then do nothing for the rest of the year.”

However, we should all expect to feel a dip after a big event, says Lewis. “And expect this to be across the board. It will affect you in mental and physical ways as symptoms are often a physical manifestation of the resultant emotions and the stress release.”

From a psychological standpoint, these major events often become the central focus of our lives, proportionately more so the closer we get to the big day. And when we’re not thinking about our strategy, our nutrition or mentally checking off everything you need to remember on the day, we’re still subconsciously preparing our

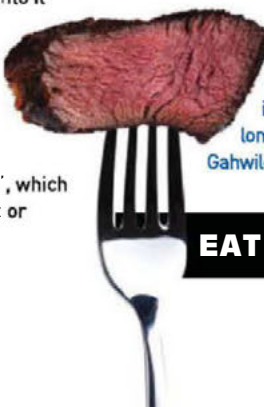
minds and bodies for what’s to come. It is understandable then that a void is left in your head space once that level of cognitive involvement is no longer required.

Gahwiler expands:

“Meaning is also important. When too much of our ‘meaning’ is attached to one event, it inevitably leaves a vacuum thereafter. It’s not unlike the crisis that some people experience on retirement.”

From a hormonal standpoint, exercise, particularly endurance sport, stimulates the release of the feel-good hormones known as endorphins. When the release during an event is combined with the euphoria that comes with completing a big goal this effect is amplified, lifting athletes even ‘higher’ in the hours and days that follow a big event. However, what goes up must come down, and the precipitous drop from these lofty levels of euphoria can often leave athletes with an unexplained feeling of emptiness or mild depression.

Furthermore, athletes and the more serious weekend warriors among us will often abstain from many things while preparing for an event such as certain foods, alcohol, sugar or even sex. “If you go from nothing before a race to bingeing after it then it can exacerbate the problem,” continues Lewis. “Athletes also tend to eat a lot when training for a big event, which often continues after the event is over, even though that volume is no longer required.” This can result in weight gain, a deterioration in general health and well-being, and can further affect hormone levels. The key, according to Lewis, is to eat quality food to aid recovery, and avoid the quantity.



EAT QUALITY FOOD TO AID RECOVERY,

**IF THE CONDITION IS NOT
MANAGED PROPERLY THEN
IT CAN QUICKLY BECOME
MORE SERIOUS.**



**SETTING YOURSELF
NEW SPORTING GOALS CAN
MAKE YOU FORGET ABOUT YOUR
POST-EVENT DEPRESSION.**

AND AVOID THE QUANTITY.

IDENTIFYING THE PROBLEM

If you're left feeling sad, pessimistic and worthless after an event or race, with a lack of interest in setting a new goal or find it difficult to concentrate on day-to-day tasks then you may be suffering from post-event depression. Chronic fatigue is another important sign that shouldn't be ignored.

"Sufferers of this condition will often become hard to live with and there is often an impact on family and friends," explains Lewis. "It also seems to be more prolific in men. That's not to say it is more common in men as this can be attributed to the fact that, in general, more men compete in the types of events that lead to this condition. Accordingly there is just a greater percentage of men who compete in relation to women." Lewis does point out, however, that this form of stress can often manifest as anger in men.

"It is therefore important for all athletes to recognise that they are going to go through this at some point, so they need to prepare. Male athletes in particular need to understand and acknowledge their emotions and learn how to deal with them. Unfortunately depression also carries a stigma when men are involved which makes it harder for them to seek treatment," continues Lewis.

He says this is important because if the condition is not managed properly then it can quickly become more serious. "If it carries on for weeks, accompanied by a loss of self-worth, self-esteem or a lack of desire for life, or intense feelings of sadness and hopelessness then I strongly urge athletes to seek professional help by visiting a registered psychologist. Once the psychologist has made a diagnosis they can recommend treatment options depending on the severity of the condition."

MANAGING THE CONDITION

It is important to remember that it is a totally normal feeling to have, and dealing with this feeling of 'loss' is actually a healthy and necessary step in the process following big events.

The important thing though is that you deal with it. Sitting around waiting for post-event depression to go away can lead to a more serious chronic depressive state.

If the symptoms aren't that severe then Lewis, a multiple Ironman and Comrades marathon finisher, suggests a few tips in helping the mind and body get back on track: "Taking a complete rest can be a mistake.

I therefore tone down my training after an event, but not too much. I need to stay active as I find that consistency is key to maintaining my physical well-being."



ADDITIONAL CONSTRUCTIVE WAYS TO DEAL WITH NORMAL POST- EVENT DEPRESSION INCLUDE:

1. Prepare yourself Know that it is going to happen. Accept it and make sure you know what to do.

2. Relive the experience

Review photos, videos or accounts of the big day to relive the experience. This can help to lift your spirits and reminds you of what you've accomplished.

3. Set new sporting goals

Merely having another goal on the horizon can give your training and efforts more meaning directly after the attainment of a big sporting goal.

4. Set yourself goals that aren't sport related

Working toward achieving a work or personal goal can be just as rewarding and can give your body the time it needs to recover while appeasing your mental and emotional needs. ■

» By Werner Beukes, Deputy Editor

YOU CAN'T TOUCH THIS... TOUCH RUGBY

Touch rugby is as much fun as it sounds. People, young and old, congregate at different venues around the country on weekday evenings to unwind from their daily grind and play ball. On the field with their mates, the demands of the real world seem distant.

Touch rugby is faster and safer than its bigger brother, the fifteen-man game. It is a game divorced from the pressure of hulking heavies in headgear competing for the ball. Tackles are replaced by touches and eat-the-dirt rules of rugby such as scrums, rucks, mauls and line-outs do not feature in the game. There is also no kicking involved.

With 'touchies' you can throw caution to the wind, balance risk and reward in seconds before you take a gap between two of your opponents for a touchdown at the far end of the field. Once you get a feel for 'touchies' you will leave the field exhausted but with a wide grin while you and your team mates trade back slaps and handshakes.

The South African Touch Association (SATA) was established in 1994 and has full membership of the Federation of International Touch (FIT) internationally. The nine official regional associations in South Africa have their own executive committees with a constitution that is in line with SATA.



"It is a fun and social game to play for ordinary people who want to unwind after a hard day's work."

GAME ON

The game is fast-paced with a standard match consisting of two 20 minute halves. It is an excellent way to improve your fitness levels while having fun with your friends.

The game's impressive growth here and abroad bears testament to its appeal and the commitment of the players. Niel de Beer, one of the touch rugby league managers based in Cape Town, has been involved in the game for the past five years and still feels enthusiastic about it.

"I play the game myself and preferably you need to be somewhat fit... but not super fit," says De Beer. The main aim of the game is for each team to score touchdowns and to prevent the opposition from scoring. One touchdown equals one point. Five a side touch rugby generally follows a 'one touch' format, which means you get only one opportunity before losing possession of the ball. In another version called 'six down' you get six opportunities before losing possession of the ball.

"A touch can be made on any part of the person, their clothes or the ball," De Beer explains. After a touch the player who was carrying the ball is required to stop, return to the mark where the touch occurred, leave the ball on the mark and retreat to defend in 'one touch' or perform a roll ball (between the legs) without delay in a 'six down' game.

Avid social touch rugby player and league manager responsible for Sandton and Edenvale, Frikkie Senekal says that a

"TOUCH RUGBY IS FAST-PACED, HEALTHY AND A SIMPLE GAME TO PLAY. IF YOU WANT TO GET FIT, BUILD MUSCLE, BURN CALORIES AND HAVE FUN WHILE DOING IT, TOUCH RUGBY IS DEFINITELY WORTH A TRY."



person does not necessarily need to have any background in sport to play the game. "It is a fun and social game to play for ordinary people who want to unwind after a hard day's work. Anyone can play the game – from complete beginners right through to injured ex-rugby players and people who just want to have fun. Leagues are run on almost every day of the week. You will also find the more professional divisions where players are selected for their province and their country," says Senekal.

"We have three seasons in the year starting from January to April which we call our Summer League, May to August is Winter League, and the Spring League falls between September and December."

"On the first night of every new season we have a grading game. After the game we look at the results and evaluate the team. We will then draft the team into a specific division where the players are more or less equally matched in terms of skill and experience. We don't put an average team in a very strong division because that will just take all the fun out of it. I think touch rugby is so popular because people regard it as a much safer variant of traditional rugby. People are also attracted to the social aspect of it." The divisions are divided into men's, women's and mixed.

Senekal has been involved in touch rugby for the past year and loves every minute of it. "You mingle with different people from all walks of life. There is an awesome vibe at 'touchies'. I have met a lot of interesting people who I now regard as my best friends. Everybody laughs but gets serious when the game is about to start."

According to Senekal, "you can play in anything that's comfortable for you to run in." Footwear should preferably be rugby boots or touch rugby boots – the ones international players wear. "If you don't have any boots then running shoes or tekkies are also acceptable."

League managers have first aid level qualifications and can assist with injuries but in general touch rugby is not regarded as dangerous and big injuries are not common.

"THE TOUCH RUGBY WORLD CUP WAS HELD IN NEW SOUTH WALES IN AUSTRALIA BETWEEN 29 APRIL AND 3 MAY 2015. THE HOST NATION WON THE GOLD MEDAL, WITH NEW ZEALAND IN SECOND AND PAPUA NEW GUINEA IN THIRD. SOUTH AFRICA WAS FOURTH."

GETTING GAME

To improve your touch rugby you have to focus on developing your core and work on your fitness as it consists of a lot of running across the field. Senekal believes that there is no need to do weight exercises at the gym to improve your game though. "I would just

do a lot of cardio to get fitter," he says. De Beer echoes Senekal's view about doing cardio to improve your fitness.

According to De Beer, specific drills such as shuttles, where players run between two markers to help develop their acceleration,

speed and fitness, running while passing the ball and defensive drills can also be performed. Touch rugby can provide you with a proper workout for your entire body in only 40 minutes, with players working at 80 percent of their maximal heart rate throughout a game.

HOWEVER, IF YOU STILL WANT TO IMPROVE YOUR STRENGTH (AND SPEED) FOR TOUCH RUGBY THE FOLLOWING SEVEN EXERCISES CAN HELP:



POWER SPRINTS

Focus: Acceleration, speed and agility

Muscle group worked: Whole body



BARBELL SQUATS

Focus: Strength and power

Muscle groups worked: Quads, hamstrings and glutes



BULGARIAN SQUATS

Focus: Strength and power

Muscle groups worked: Quads and calves



BARBELL ROLL-OUTS FROM KNEES

Focus: Core

Muscle group worked: Abs



ALTERNATE LEG CROSS-OVERS

Focus: Flexibility, core

Muscle group worked: Whole body



BARBELL BENCH PRESS

Focus: Strength and power

Muscle groups worked: Chest, shoulders, arms



FLOOR ANGELS

Focus: Flexibility

Muscle groups worked: Shoulders and upper back. ■

THE FALLACY OF 'LAZY' CALVES

■ **FIX SKINNY MAN CALVES** WITH THE RIGHT FOCUS AND APPROACH

A big, strong set of calves is always a winner. They exude masculinity and bring to mind words like "power" and "strength" in all those who cast their gaze on them.

It is a pity then that few guys actually train them hard enough to ignite any growth. They blame their lack of calf development on "poor genetics" and hide behind that common saying, "you're either born with them or you aren't".

Generally speaking your calves consist of the group of muscles located at the back of your tibia – the gastrocnemius, soleus, plantaris and tibialis posterior (the popliteus muscle, a knee flexor, is also found there).

Ultimately they comprise the same types of muscle fibres found in skeletal muscle throughout the rest of your body, albeit in differing ratios. As such, the right approach to training should deliver the same kind of results. Granted, while they may respond to movement and overload slightly differently to other muscles based on their function, and genetics will determine the shape of your calves to a large degree, the truth of underdeveloped calves resides in a myriad factors.

01

A LACK OF UNDERSTANDING

The first major hurdle to optimal calf development is the general lack of understanding held by the gym-going community at large, specifically about the form and function of the calf muscles.

In terms of form, your calves consist of more than just the gastrocnemius and soleus. There are actually several muscles located at the back (posterior) of your lower leg bone that form groups of superficial and deep muscles.

The superficial group includes the gastrocnemius, soleus and plantaris muscles, with the gastrocnemius the most visible; it gives your calf its shape and girth. The deep group includes the popliteus, flexor digitorum longus, flexor hallucis longus and the tibialis posterior.

The soleus inserts at the calcaneus (heel bone) via the Achilles tendon, with its origin at the tibia and fibula. The gastrocnemius originates at the medial and lateral condyle of the femur and also inserts at the calcaneus via the Achilles. The other superficial muscle, the plantaris, has an important proprioceptive role in terms of lower extremity biomechanics, but has little involvement in movement.

The most important deep posterior muscle is the tibialis posterior. This, the most central of all the leg muscles, is a relatively unknown muscle to most gym-

"ALL OF THE POSTERIOR CALF MUSCLES WORK TOGETHER TO INITIATE PLANTAR FLEXION – RAISING YOUR HEEL OFF THE FLOOR AS YOU RISE UP ON YOUR TOES."

"BY SITTING DOWN TO PERFORM PLANTAR FLEXION THE GASTROCNEMIUS ENTERS ACTIVE INSUFFICIENCY AND THE SOLEUS IS PRIMARILY RECRUITED."

goers even though it plays an important biomechanical role in terms of foot movement. It is also an important stabiliser muscle.

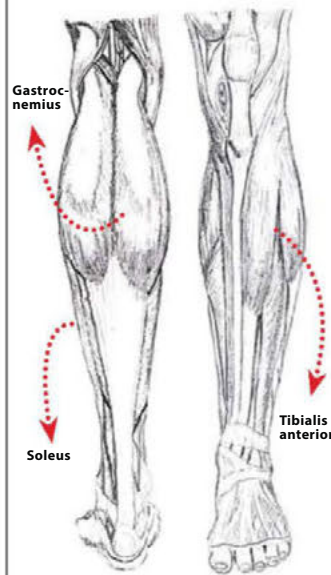
All of these posterior calf muscles work together to initiate plantar flexion – raising your heel off the floor as you rise up on your toes. Foot inversion, which is when you rotate the bottom of your foot inward, is also controlled by these muscles. Conversely, eversion is the outward rotation of your foot which involves three of the four peroneus muscles – the longus, brevis, and tertius.

In terms of exercise prescription, it is important to note that the gastrocnemius is a two-joint muscle while the soleus is a single-joint muscle. By sitting down to perform plantar flexion the gastrocnemius enters active insufficiency and the soleus is primarily recruited. In contrast, during standing exercises, the gastrocnemius is more involved.

The key point to take from this human anatomy and biomechanics lesson is that the calf muscles are responsible for lifting the heel off the floor. This is precisely the reason why working your calves through a full range of motion by dropping your heels below the level of a platform into dorsiflexion isn't always necessary to overload the calf muscles. In terms of this movement the posterior muscles work as antagonist (opposing) muscles to the anterior muscles (the tibialis anterior, extensor hallucis longus, extensor digitorum longus, and peroneus tertius) which initiate and control dorsiflexion.

The other important aspect of calf muscle form worth mentioning in this discussion is that of muscle composition as this materially impacts your approach to training. In terms of the two major muscles, the gastrocnemius and soleus, the predominant type of muscle fibre found in these two muscles is actually type-I or slow twitch muscle fibres.

This is important because it informs your set and rep structure, and explains why many



guys who try to smash their calves with heavy weights often fail to achieve the results they're after. This can be attributed to the fact that muscles that are predominantly composed of slow twitch muscle fibres respond better to higher volumes, while the muscles with more type-II muscle fibres – the power generators – will require a combination of heavier lifts and more explosive exercises.

To be more specific, a review of available research and literature on the composition of muscles compiled by Chris Beardsley, a qualified personal trainer and the Director of Strength & Conditioning Research Limited, who holds a Master's Degree from Durham University in the UK, found that the soleus is comprised of between 70-96% type-I muscle fibres, while the gastrocnemius is comprised of anywhere between 44-76% slow twitch fibres.

The predominance of slow twitch fibres in the soleus has been attributed to its role as a stabiliser as its main purpose is to maintain posture by stabilising the leg's connection to the foot, and type-I fibres are best suited to this function. Accordingly, the 8-12 rep range most guys adopt for leg training is normally insufficient to deliver the correct adaptive response (but more on that later...).

RUDX



Lauren Fick Wbff Pro

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02

A LACK OF PRIORITISATION

Let's admit it, if there is one training session most of us are willing to skip each week it's leg day. And even when we manage to get a good session in, calves are normally an afterthought following a gruelling quads session. Calves are more often than not neglected as you're too tired to stack the seated calf raise.

Unfortunately without the right kind of stimulation no muscle will adapt and grow and calves are not different to other muscle groups. Why would you smash quads with four exercises, performing four sets on each, and only complete two exercises of three sets for calves at the very end? That's hardly the volume required to stimulate the type-1 fibres in your calves.

Granted, while calves are incorporated into certain leg exercises, most of the

heavy lifts are closed kinetic chain lifts (feet fixed to the floor), where the predominant ankle and foot movement is dorsiflexion. As you'll remember from our anatomy and biomechanics lesson earlier on, the posterior calf muscles require plantar flexion to contract and therefore grow.

As such, it pays to implement a few steps in this regard to get the growth you want:

Train calves twice a week if they are lagging. This will deliver the volume you're looking for.

Dedicate a day to calves or train them together with a well-developed upper body part so that you can give them the adequate attention they require (and deserve). Shoulders are a great option. Your second calf session in the week can be combined with upper legs; quads and/or hammies.

03

YOU DON'T KNOW HOW TO TRAIN THEM

Don't assume that all calf exercises deliver the same results. As was already mentioned, the soleus is predominantly recruited in seated plantar flexion movements, while the gastrocnemius is the primary mover in standing calf raises. In fact, in the seated calf raise (knees flexed approximately 90°), the gastrocnemius is virtually inactive while the load is borne almost entirely by the soleus.

However, it is important to note that any bent-knee movement, even when standing, will shift the emphasis onto the soleus.

This is because the gastrocnemius attaches above the knee joint, making it unable to contract very strongly when the knee is bent. Accordingly your calf training routine should consist of seated, bent knee and straight leg calf raises to effectively target both of these muscles.

There is also some debate around foot position. While many believe that the position of your toes has little effect on the manner in which your calves contract, research by Dr. Per Tesch of the Karolinska Institute in Stockholm, Sweden, shows otherwise. Dr Tesch's use of magnetic resonance imaging suggests that a "toes in" position activates both heads and that a "toes out" position activates the medial head of the gastrocnemius to a higher degree.

Additional research worth mentioning includes findings from a study published in 1988 in the journal *Physiology*, conducted by Nardone and Schieppatti, which shows that the soleus is preferentially activated in the concentric phase and the gastrocnemius in the eccentric phase during moderate force production. Furthermore, the researchers found that the gastrocnemius becomes even more activated at higher lengthening velocities, which would make explosive activities such as plyometrics, sprinting and hopping ideal tools to target the most visible of the

calf muscles. This is supported by findings from a 1990 study by Moritani et al. which found that the gastrocnemius, with its greater proportion of fast twitch motor units, is preferentially activated over the soleus during hopping.

Lastly, it may be worth your while to shift between heavy weights and lower reps, and lighter weights and higher reps depending on which exercise you're doing and what calf muscle you're targeting. Another study published in the journal *Physiology*, this time in 1998 by Ratkevicius et al., titled "Energy metabolism of the gastrocnemius and soleus muscles during isometric voluntary and electrically induced contractions in man" found that "the EMG (electromyography) r.m.s (root mean square value) and the anaerobic ATP turnover were higher in the soleus than in the gastrocnemius muscle during continuous voluntary plantar flexions at 40 % MVC (maximum voluntary contraction). This indicates that the soleus muscle makes a disproportionate contribution to total force production compared with the gastrocnemius muscle during submaximal voluntary contraction."

Keeping the aforementioned in mind, it is then better to use heavier weights and lower reps to produce more force during exercises that target the gastrocnemius muscle, which are the straight leg exercises, and lighter weights with greater volume during exercises for the soleus muscles.

"THE SOLEUS IS PREDOMINANTLY RECRUITED IN SEATED PLANTAR FLEXION MOVEMENTS, WHILE THE GASTROCNEMIUS IS THE PRIMARY MOVER IN STANDING CALF RAISES."

04

YOU WEAR THE WRONG SHOES

We've covered the topic of minimalist footwear in this magazine before, but it's worth discussing again in the context of calf development.

Most modern training shoes place a thick slab of artificial material between your feet and the ground, encasing them throughout most of our active lives. When you add the thick heel wedges that result in a steep heel-to-toe drop to the equation you have a recipe for weak, underdeveloped calves. This happens because, by constantly shifting loads, you gradually reduce ankle mobility which weakens the structures around your feet, the most important of which are your calf muscles.

Minimalist footwear – thin soles and a 0mm drop between heel and toe – promotes natural movement by shifting our weight back onto your heels. What this means for calf muscles is that they work through a greater range of motion every time we step as our feet are now flat on the floor and aren't tilted forward all day, sometimes in excess of 10-12mm depending on the shoes you wear. This ensures they work in the manner nature intended.

"WEARING MINIMALIST FOOTWEAR ENSURES YOUR CALVES FUNCTION IN THE WAY NATURE INTENDED."



Gavin Perry, WBFF pro and Vibram-sponsored athlete.

05

POOR BIOMECHANICS

Whenever you put anything under your heels – in the case of modern shoes this is a thick heel wedge – you mis-align the plantar fascia which creates imbalances further up the posterior fascial chain. And when we carry biomechanical dysfunction in other areas along our posterior chain our bodies create compensation patterns to cope with the weakness. This is just one more way we are altering our natural movement

patterns and biomechanics, which often results in calves that don't function in the way they were designed to. Then, when we train repeatedly over extended periods of time, we reinforce these poor movement patterns and it becomes a self-perpetuating cycle of misuse. This continued onslaught will eventually make your subconscious (autonomic) movement patterns incompetent too.

WITH THESE FACTS IN MIND, HERE ARE

FIVE STEPS TO BIGGER CALVES

1 Make calf training a priority: Dedicate a session to calves or train them twice a week. Just make sure they get the same amount of attention as your other muscle groups. And always remember, friends don't let friends miss leg day!

2 Use a variety of rep ranges and weight: Use lower rep structures with heavier weights for gastrocnemius development, and lighter weights with more volume for the soleus.

3 Select the right exercises for the job: A bent knee calf exercise targets the soleus while straight legs calf raises are best for the gastrocnemius. And don't be afraid to throw in a few explosive training techniques to bulk up those gastrocs!

4 Go minimal: Train and live, as much as possible at least, in shoes that have a 0mm heel-to-toe drop. They don't have to be minimal in terms of the cushioning in the sole, but the stack height is vitally important.

5 Work to restore ankle and foot mobility. ■

IDEAL CALF EXERCISES INCLUDE:

SINGLE LEG STANDING DUMBBELL CALF RAISES



STANDING CALF RAISES



DONKEY CALF RAISES



SEATED CALF RAISES



TOE PRESS ON A LEG PRESS WITH THE KNEES EXTENDED



» By Pedro van Gaalen, Editor
» Performed by Dylan Dawson » Images by Cindy Ellis

DUMBBELL MEAT MAKERS

■ Weight training's precision tools for adding muscle and sculpting physiques

The dumbbell is a seemingly insignificant piece of equipment when considered alongside the huge poundages that the Olympic bar and the other machines can accommodate. Yet, for its size the dumbbell punches above its weight class for many reasons, particularly when it comes to adding significant muscle to your frame.

THE BENEFITS

While dumbbells aren't the best way to add serious mass as you can't lift as much as you would on an Olympic bar or machine, they promote more balanced muscle strength and development. This is the key benefit to training with dumbbells and is an important element for anyone who is serious about sculpting the perfect physique.

This is attributed to the fact that when lifting dumbbells, be it during bilateral or unilateral exercises, you need to control two

independent implements rather than a single barbell with both arms simultaneously. This ensures that both sides of the body have to do the same amount of work as the stronger side cannot dominate the movement. This will help to correct any strength imbalances that you may have and ensures that all muscles are engaged to the same degree. This also makes dumbbell training a more complex motor activity when performing many exercises.

DUMBBELL FACT:

It is thought that the dumbbell originated from the haltere, a hand-held weight used in ancient Greece, and was later used by English bell ringers as a way to build strength.



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DAY 1: CHEST AND BICEPS

EXERCISE	SETS	REPS
Dumbbell press	4	8-12
Dumbbell flyes	3	8-12
Dumbbell pullover	3	8-12
Alternating dumbbell curls	3	8-12
Hammer curls	3	8-12

THE GREAT PULLOVER DEBATE:

YES, INCLUDE PULLOVERS IN YOUR CHEST ROUTINE. While the movement certainly activates your lats, it actually activates your pecs to a greater degree. This is supported by science, as a 2011 study entitled "Effects of the pullover exercise on the pectoralis major and latissimus dorsi muscles as evaluated by EMG" shows. The study, published in the Journal of Applied Biomechanics, found that the barbell pullover exercise emphasised the pectoralis major more than that of the latissimus dorsi.



PERFORM THE PERFECT PULLOVER

THE SETUP: Lie perpendicular to a bench, with only your shoulders supported. Place your feet flat on the floor, shoulder width apart. Grasp the underside of the top weight plate of a dumbbell using a diamond-shaped hold. Position the dumbbell over your chest with your elbows slightly bent.

THE MOVE: Lower the weight backward over your head until the upper arms are in line with the torso, parallel to the floor. Pull the dumbbell back up over your chest in an arc-like motion. Do not allow your hips to rise up significantly during the movement.

DUMBBELL PRESS

Utilising dumbbells for this press forces both sides to work equally hard.



THE CROSS-BENCH VERSION OF THE DUMBBELL PULLOVER WAS MADE POPULAR BY ARNOLD SCHWARZENEGGER IN THE 1970S – THE GOLDEN ERA OF BODYBUILDING

DUMBBELL FLYES

Keep your shoulders internally rotated so that your elbows point downward at the bottom position and outward at the top position.



WHEN YOU DO INCLINE DUMBBELL FLYES CHANGE THE ANGLE OF THE BENCH EVERY SET TO FULLY STIMULATE YOUR CHEST

BENEFITS OF DUMBBELL TRAINING:

1) DUMBBELLS ARE FUNCTIONAL in terms of specific applications in human movement and sporting performance as we rarely apply force against balanced resistance in real life or during events and competitions. Accordingly, alternating and unilateral movements often simulate specific movements more closely, thereby providing a unique training stimulus when compared with typical barbell training (Lauder and Lake 2008).

2) The compact nature of the dumbbell makes it a GOOD CHOICE FOR DYNAMIC, POWER-BASED MOVEMENTS.

3) A MORE NATURAL RANGE OF MOTION IS PROMOTED when lifting dumbbells as you can turn or rotate them as you press.

4) LIFTS USING HEAVY DUMBBELLS ARE OFTEN SAFER than barbells as the dumbbells can be 'dumped' if you reach complete muscle failure.

5) GREATER EXERCISE VARIETY IS OFFERED – alternating exercises, single arm movements, staggered lifts, and uneven loading are all possible – and you can perform various combinations of movements.

CURLS

Perform them as a bilateral movement (curling them together) or in an alternating fashion if that has a more functional application to your sporting or developmental goals.



DAY 2: QUADS AND HAMMIES

EXERCISE	SETS	REPS
Squats (front or box)	4	12-15
Dumbbell lunges	4	12-15
Split squat	3	12
Step ups	3	12
Dumbbell stiff legged deadlifts	4	12-15
Single leg stiff legged deadlift	3	10 per leg

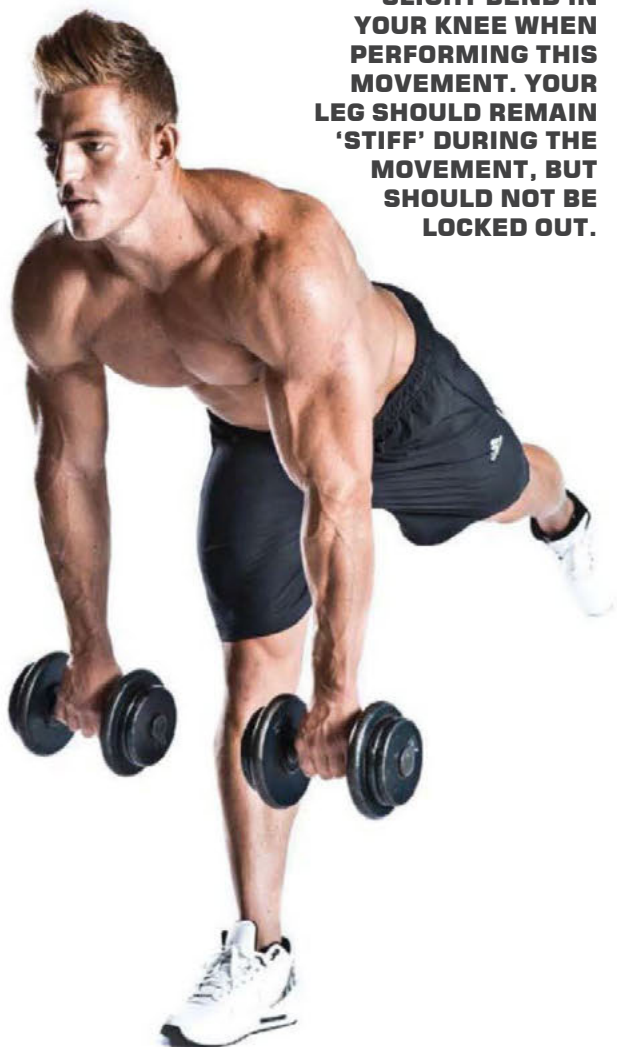
SINGLE LEG STIFF LEGGED DEADLIFT

The single leg stiff legged deadlift, also known as the Romanian deadlift, is a complex move.

THE SETUP: To execute it perfectly stand holding two dumbbells with an overhand grip, at arm's length, with your feet positioned shoulder width apart.

THE MOVE: Bend your knees and lean forward at the waist, picking up one leg behind you. Do not rotate your hips as you do so. Keep looking up and forward as you lower the dumbbells down towards the ground either side of your supporting leg. Keep the dumbbells close to your shins as you lower them and try to get them to just touch the floor before returning back up.

MAINTAIN A SLIGHT BEND IN YOUR KNEE WHEN PERFORMING THIS MOVEMENT. YOUR LEG SHOULD REMAIN 'STIFF' DURING THE MOVEMENT, BUT SHOULD NOT BE LOCKED OUT.



DUMBBELL SQUATS WILL HELP STRENGTHEN YOUR BODY AND INCREASE YOUR FLEXIBILITY.



SQUAT VARIATIONS

A front squat is performed when a single heavy dumbbell is grasped at chest height with both hands. A box squat is performed holding dumbbells in either hand at your sides.

DUMBBELL LUNGE
KEEP YOUR TORSO UPRIGHT WHEN PERFORMING LUNGES.





SPLIT SQUAT

Ensure that the knee of your leading leg does not extend past your toes.



STIFF LEGGED DEADLIFTS

Maintain a slight bend in your knees when performing this movement. Your legs should remain 'stiff' during the movement, but should not be locked out.

WHEN YOU ARE COMING UP, SQUEEZE YOUR HAMSTRINGS AND GLUTES.

DEBUNKING A MYTH

Many proponents of dumbbell training to target specific muscles often explain that dumbbells activate muscles to a greater degree over barbells. However, there is a body of available research that conflicts with that statement.

A 2005 study by Welsch et al. 2005, for instance, which compared muscle activation while performing barbell bench press and dumbbell bench press, found that the pectoralis major appeared to reach approximately the same peak activation level during the lifting phase of these two chest exercises. However, it is worth noting that subjects only performed three repetitions with a resistance representing a six-repetition maximum. As a result this protocol may not have resulted in fatiguing contractions in the recruited muscles.

What we do know is that dumbbells recruit more stabiliser muscles and distribute the weight more evenly between sides.

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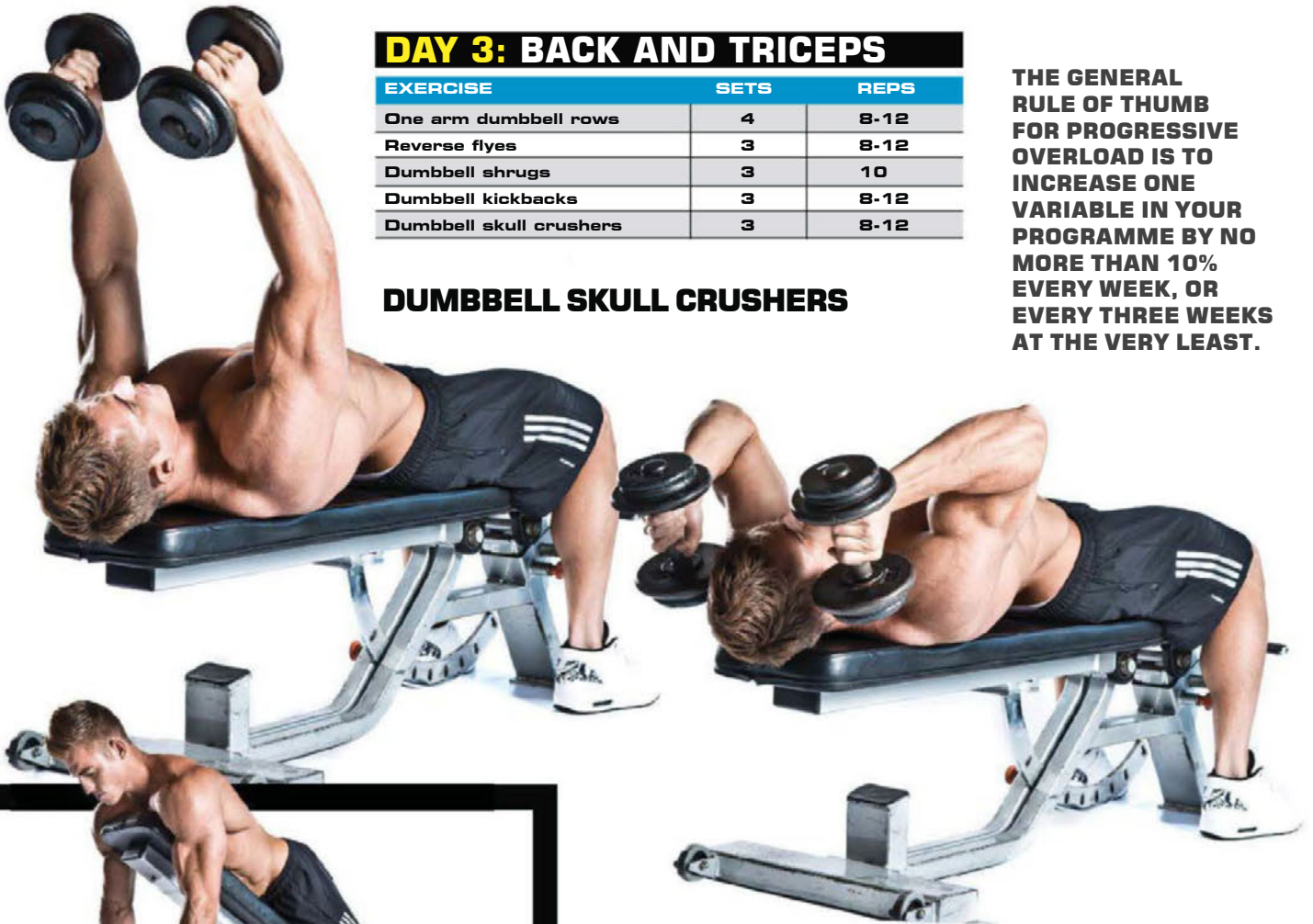
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DAY 3: BACK AND TRICEPS

EXERCISE	SETS	REPS
One arm dumbbell rows	4	8-12
Reverse flyes	3	8-12
Dumbbell shrugs	3	10
Dumbbell kickbacks	3	8-12
Dumbbell skull crushers	3	8-12

THE GENERAL RULE OF THUMB FOR PROGRESSIVE OVERLOAD IS TO INCREASE ONE VARIABLE IN YOUR PROGRAMME BY NO MORE THAN 10% EVERY WEEK, OR EVERY THREE WEEKS AT THE VERY LEAST.

DUMBBELL SKULL CRUSHERS



ONE ARM DUMBBELL ROWS

Concentrate on pulling the weight from your back muscles. Don't just move your arm up and down.



REVERSE FLYES

CAN BE EXECUTED IN A BENT-OVER POSITION OR ON A BENCH, AS DEPICTED.



DUMBBELL KICKBACKS



DUMBBELL SHRUGS

THERE IS NO NEED TO ROLL YOUR SHOULDERS DURING SHRUGS TO TARGET YOUR UPPER TRAPS. SIMPLY AIM TO TOUCH YOUR EARS WITH YOUR SHOULDERS WHILE PERFORMING AN UP AND DOWN MOVEMENT.

NUTRITION TIPS

Aim to get at least 2g of derived protein per kilogram of lean bodyweight per day to assist with the muscle rebuilding and repair processes that occur during recovery.

Your most important meal of the day is the one directly after your training session. Aim to eat within two hours of your training session. Your meal should consist of protein and a combination of high and low glycaemic index natural carbohydrates to deliver amino acids to muscle cells and replenish depleted muscle glycogen stores.

IDEAL PROTEIN SOURCES

Lean sources of animal protein – chicken, game, fish, eggs and lean beef, as well as dairy and plant sources such as lentils, quinoa and certain beans or soya. Additional sources of high biological value protein includes protein powders (whey, casein, MRPs), BCAA supplements, and Essential Amino Acid supplements.



DAY 4: SHOULDERS & CALVES

EXERCISE	SETS	REPS
Arnie press	4	8-12
Dumbbell shoulder press	4	8-12
Lateral raise	3	8-12
Front raise	3	8-12
Rear delt dumbbell rows on bench	3	8-12
Standing dumbbell calf raises	4	8-12
Seated dumbbell calf raises	4	12-15



ARNIE PRESS

Avoid locking your elbows out at the top of the movement to keep the focus on your shoulders. It is important to lead the rotational movement with your elbows, not your forearms, to emphasise shoulder abduction.



SHOULDER PRESS

The seated dumbbell press is one of the most popular mass builders for the shoulders!



REAR DELT DUMBBELL ROWS ON BENCH



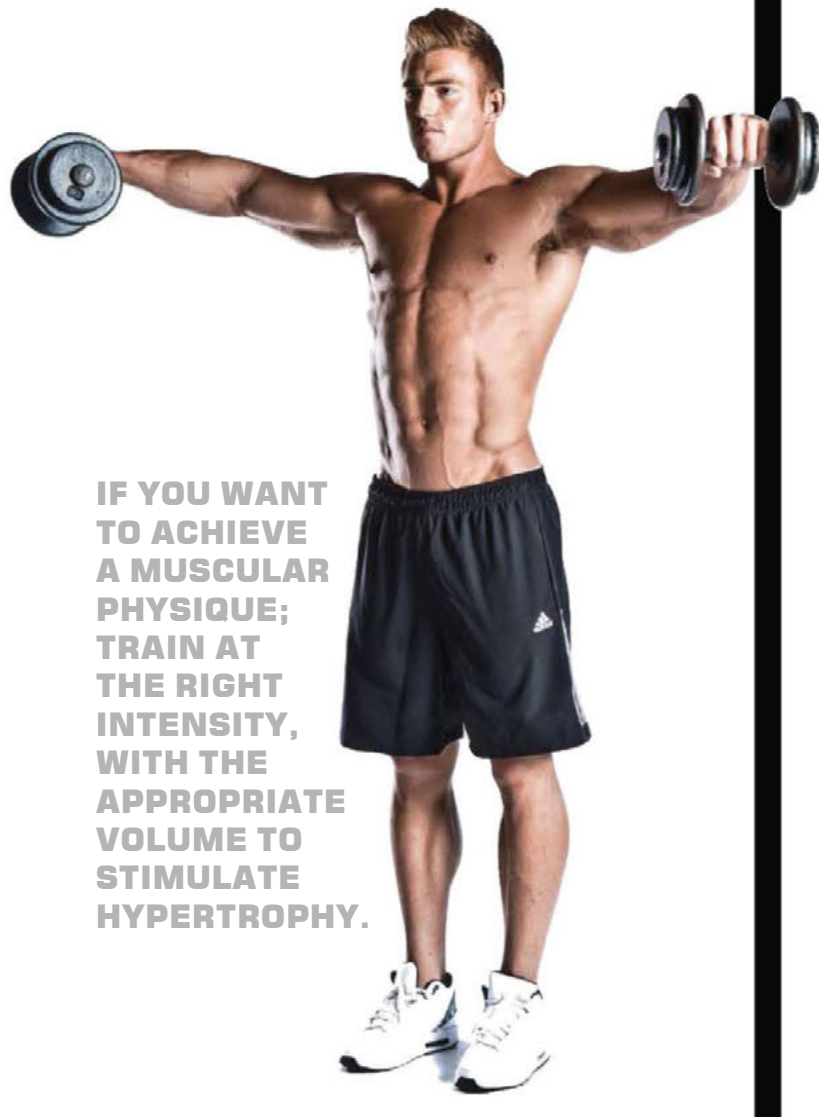
SUPPLEMENT TIPS

Sipping on an intra-workout mix of essential and branched chain amino acids during training is a good way to preserve muscle tissue during high intensity weight training or cardio, and also helps the body kickstart the anabolic process sooner in response to the imposed training stimulus.

Whey protein is a must-have product in your muscle-building supplement plan. This source of highly bioavailable amino acids aids recovery and promotes muscle growth. The ideal times to consume whey are directly after weight training and first thing in the morning.

Casein protein is a good addition to any muscle-building plan for use at night. The slow release nature of the product ensures that a trickle of amino acids continues deep into your sleep cycle – your most anabolic state – to reduce the time spent in a fasted state and mitigate the catabolism that can occur between dinner and breakfast.

LATERAL RAISE



IF YOU WANT TO ACHIEVE A MUSCULAR PHYSIQUE; TRAIN AT THE RIGHT INTENSITY, WITH THE APPROPRIATE VOLUME TO STIMULATE HYPERTROPHY.

RECOVERY TIPS

Technically speaking, muscle growth doesn't happen during training. It happens between weight training sessions when you rest and feed your damaged muscle tissue with the right amount and types of macronutrients.

Accordingly, it is important to give your muscles the time they need to fully recover, so don't train the same muscle group within 48 hours of your last session.

Make sure you get enough sleep as this is when a number of important anabolic processes happen which repair and rejuvenate our damaged muscle tissue. This is driven by a hormonal cascade, when important anabolic hormones such as growth hormone (GH) and testosterone are released in high quantities while we sleep – over 90% of your daily GH supply is actually released while you sleep, mostly during the first hour. If you get less than the required 8-9 hours of sleep a night you aren't giving your muscles the time they need to repair and adapt to your hard training sessions.

FRONT RAISE

Focus on moving only at the shoulders, keep your body as still as possible. Use slow and controlled movement, avoid "swinging" the weights up and dropping them.

REST AT LEAST 48 HOURS BETWEEN TRAINING SESSIONS THAT TARGET SPECIFIC MUSCLE GROUPS.



CALF RAISES

Perform less volume with heavier weights to develop your gastrocnemius muscles during standing calf exercises, and higher volume with lighter weights during seated bent-knee exercises that target your soleus for optimal calf development.

See page 56 for more.



SOFT TISSUE MANIPULATION

■ THE IMPORTANCE OF A PROACTIVE APPROACH TO THE MANAGEMENT OF SOFT TISSUE HEALTH

» By Sean Johnson, founder of the Centre for Structural Medicine.
» Additional reporting by Pedro van Gaalen, Editor

THERE IS A CHINESE PROVERB THAT SAYS: "WHEN THERE IS NO MOVEMENT,

THERE IS PAIN. WHEN THERE IS MOVEMENT, THERE IS NO PAIN."

It seems simple enough but it is sage advice for most of the people in our society where inactivity, poor diet and sedentary work conditions are the prevailing trends.

As a species we're designed to run across vast distances, to hunt for our food and to defend our tribe from outside conquerors. In today's "modern world" we spend hours in our cars covering vast distances, hunting in shopping aisles and engaging with others via social media. You see, mentally we are adapting to the modern world. Our bodies, however, are a little slow in coming to the party.

Our bodies have been conditioned by millions of years of evolution and it's slowly and resolutely

adapted its structure to fit its function. However, the pace of progression over the last 100 years has necessitated that our bodies adapt quicker than what evolution allows.

Back pain, neck pain, digestive issues, joint pain, and high stress levels (the list goes on) can all be attributed to our modern sedentary lifestyle. The reason for that is our muscles and connective tissue need to be used to prevent these tissues from becoming stiff. When this happens our body structure becomes compromised and therefore so does its functioning, which leads to structural or physiological problems.

As an active individual, athlete or just a general fitness enthusiast, understanding the role of our muscle and connective tissue network within our bodies and how they can be manipulated to resolve issues and restore function will help us improve the way we move in any type of activity.

MYOFASCIAL TISSUE

The myofascial network is a continuous, three dimensional network that allows our bodies to function holistically and to move in multiple directions. It is the worker force of the central nervous system (CNS) and without a healthy myofascial system your body would not be able to carry out the commands of the CNS.

Another important aspect of this type of connective tissue is that it acts as a force transmitter and disperser. Whether you run, jump, stretch or lift, the fascial network in your body acts as a buffer for the internal forces (exerted by muscle) and external forces (exerted by gravity or contact sports).

If you've ever seen an athlete accelerate in a race or suddenly change direction on the field of play, it's the fascial network that enables that. Even the bodyweight movements of CrossFit or the complex strength exercises executed in the gym are


all performed by the body because our connective tissue acts as a force transmitter.

Most top sports people or athletes all put their success down to hard work and practice. The reason for this is the body is trained in repetitive ways, such that movement patterns become almost automatic and are carried out by the subconscious mind. I read with interest about a particular NFL quarterback who said that when he was in his optimal functioning zone, "the game almost plays itself." This is possible because connective tissue has 10 times more proprioceptors than muscle and allows us to respond to our environment much quicker than our conscious mind can respond.

Davis' Law states that soft tissue will remodel itself along lines of stress (Clark, Lucett and Corn 2008). Accordingly, if we, day in and day out, practice a particular movement pattern, the soft tissue in our body adapts and becomes stronger in that particular movement. Our

"DIRECT MUSCLE TISSUE MANIPULATION TECHNIQUES AIM "TO ENABLE THE MUSCLES IN YOUR BODY TO WORK IN THE MOST EFFECTIVE MANNER TO REDUCE THE RISK OF INJURY AND ENHANCE PERFORMANCE."





"OFTEN, ACTIVE PEOPLE CAN HAVE AREAS OF MUSCLE AND NERVE TENSION FROM A POOR WORK POSTURE OR OTHER ACTIVITIES IN THEIR DAILY LIFE THAT ARE NOT DIRECTLY LINKED TO THEIR SPORT OR THEIR EFFORTS IN THE GYM."

MYOFASCIAL RELEASE A safe and effective physical and manual technique that involves applying gentle, sustained pressure into muscular (myo) and fascial connective tissue restrictions to eliminate pain and restore motion.

CROSS FRICTION MASSAGE A form of deep tissue massage applied transversely to the specific tissue involved. It aims to maintain mobility within the soft tissue structures of ligament, tendon, and muscle and prevent adherent scars from forming.

TRIGGER POINT MASSAGE A form of physical therapy specifically designed to alleviate the source of the pain through cycles of isolated pressure and release.

ACTIVE RELEASE TECHNIQUE (ART) A patented soft tissue system and movement-based massage technique that treats problems with muscles, tendons, ligaments, fascia and nerves. It addresses problems in individual tissues and in between tissues using Complex Protocols that identify problems and treats them by combining precisely directed tension with very specific patient movements. These treatment protocols – over 500 specific moves – are unique to ART.

MUSCLE ENERGY TECHNIQUES A direct and active manual therapy technique that engages a restrictive barrier and requires the patient's participation for maximal effect, aimed at improving musculoskeletal function and alleviating pain.

muscles grow in response and our fascial network becomes denser and stronger, making us more efficient, powerful or agile, depending on what training we do.

However, this repetitive training can sometimes make us strong in certain movements but weaker when we venture outside of those movement patterns. This is when adaptation isn't always positive. This can also happen from sitting all day at a desk or living a sedentary lifestyle, for example.

Samantha de Bruin, a registered physiotherapist based at the Rivonia Sports Centre in Morningside Manor, Johannesburg, agrees: "Often, active people can have areas of muscle and nerve tension from a poor work posture or other activities in their daily life that are not directly linked to their sport or their efforts in the gym. One often doesn't feel like they are injured but any form of tension or stress on muscle and other soft tissue from poor posture can affect the body when it comes to exercise."

De Bruin explains that any tension in the body can affect the movement of your muscles, even further down your movement chain. "For example, tightness in your neck from working on a computer all day can cause tightness in your back, which can lead to injury. This is often due to muscle imbalances, where one area is stiffer than another, or a muscle is stronger than another around a joint."

In this context, inactivity could be considered the force that our soft tissue adapts to, including our myofascial network, which leads to biomechanical problems, pain and discomfort. Accordingly, there is a great deal of benefit to regular sessions with a qualified and experienced soft

tissue manipulation expert.

A form of soft tissue manipulation that is rapidly growing in prominence, for all the reasons already stated in this article, is fascial release and realignment. This can be performed by a Bowen therapist, Fascial Manipulation© practitioner, osteopaths, and certified Rolfers®.

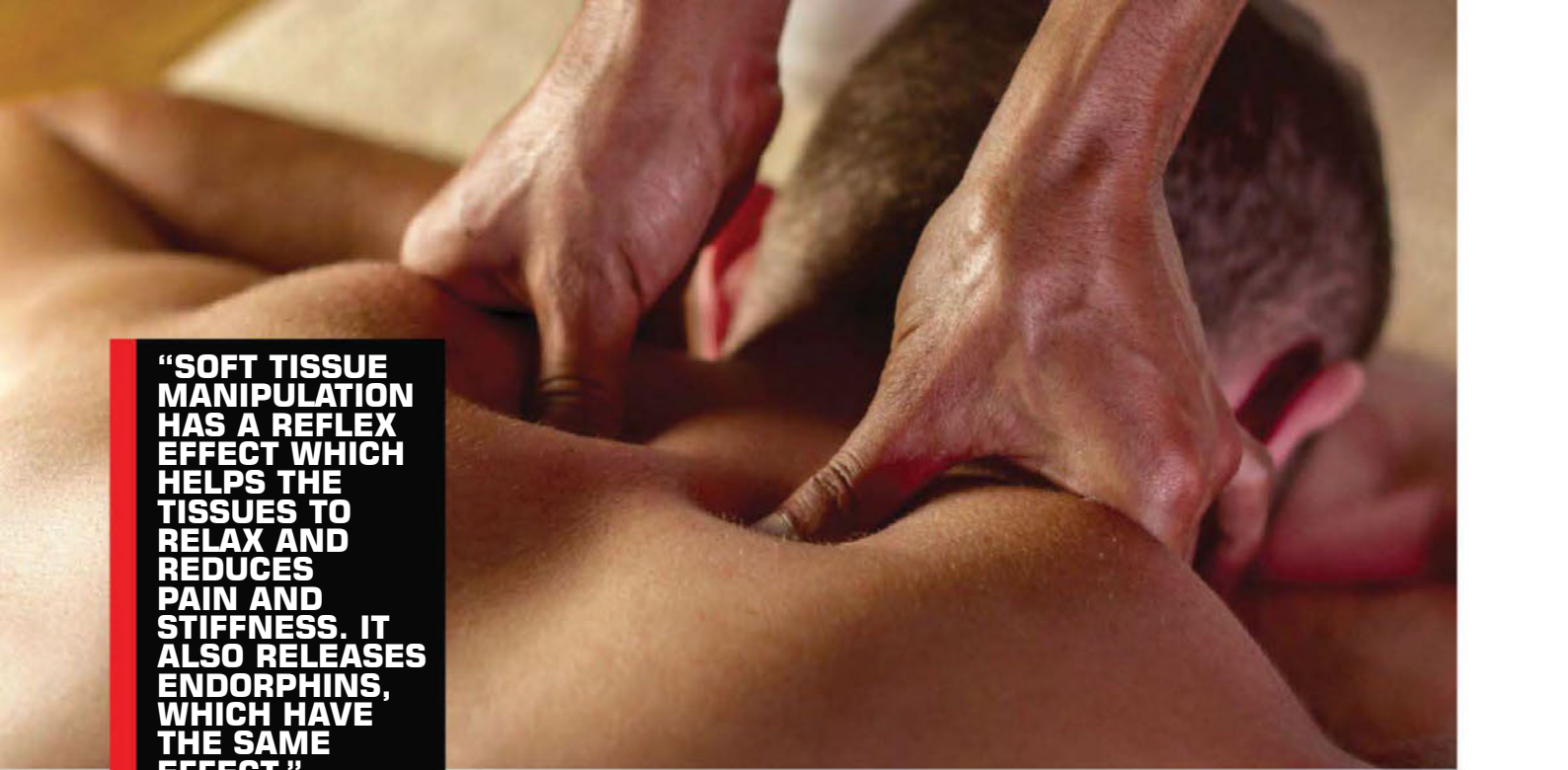
MUSCLES AND MORE

However, De Bruin explains that the term 'soft tissue manipulation' is quite broad in the wider health and fitness community, and is often used to describe different treatment techniques.

"Most people will know the basic ones, such as deep tissue massage and stretching, but there are other important techniques that can be used during a treatment. These include trigger point therapy, where pressure is applied directly on a trigger point or muscle 'knot' and is sustained for a period of time until that muscle starts to release."

Other techniques that can be used are cross friction, active release techniques and muscle energy techniques. According to De Bruin, the best treatment often involves a combination of these.

She elaborates that, much like myofascial release and realignment, more direct muscle tissue manipulation techniques aim "to enable the muscles in your body to work in the most effective manner to reduce the risk of injury and enhance performance. These techniques also help to stimulate circulation, which increases oxygenation and blood flow to muscles. This also helps to remove waste and toxins. This is important for a faster recovery."



"SOFT TISSUE MANIPULATION HAS A REFLEX EFFECT WHICH HELPS THE TISSUES TO RELAX AND REDUCES PAIN AND STIFFNESS. IT ALSO RELEASES ENDORPHINS, WHICH HAVE THE SAME EFFECT."

Joint misalignment, poor movement patterns, overload and stress, direct or indirect trauma and soft tissue injuries can also lead to adhesions and the build up of scar tissue, which is what creates so-called 'trigger points'.

"These direct manipulation techniques help to break up fibrosis and adhesions – the trigger points and 'knots' that develop in the muscle belly – which help to improve the flexibility and elasticity of the tissue. When combined with stretching, which will increase your range of movement, you will develop a strong flexible muscle that is less prone to injury and is better able to work at its optimal workload."

In addition, soft tissue manipulation also stimulates the nerve receptors in the tissue that controls tension, says De Bruin. "It has a reflex effect which helps the tissues to relax and reduces pain and stiffness. It also releases endorphins, which have the same effect."

In terms of the frequency of treatment, De Bruin believes it all depends on the individual. "There are so many factors to take into consideration which is why it is normally at the discretion of the treating therapist based on how things look and feel."

SHE SUGGESTS THAT THE FOLLOWING FACTORS ARE CONSIDERED WHEN MANAGING AND MAINTAINING OPTIMAL HEALTH:

• **Training methods** – How often are you training? How hectic is your schedule? For example, are you gyming daily doing light training or heavy weights? Or are you training for a marathon in a short period of time? Do you do the same exercise all the time or are you mixing it up?

• **Pre- and post-training routines** – Do you warm-up and cool down? Are you walking out the door and going into a full run or do you walk or jog initially beforehand? While there is some debate around the ideal warm up it is important to never exercise a cold muscle as they are less flexible and there is a higher risk of injury. Stretching after a workout is also important for all the reasons already stated.

"My recommendation is at least one session a week in high training periods, once a month for maintenance if there is chronic tension, and at least once every 3-4 months to relax tight muscles," she concludes.

MIND MUSCLE CONNECTION

If that is not sufficient reason for you to consider a more proactive approach to soft tissue manipulation, there is now a growing body of research that shows how connective tissue holds and stores emotion.

R. Louis Shultz and Rosemary Feittis, discuss how the body holds emotion in their book *The Endless Web: Fascial Anatomy and Physical Reality* (North Atlantic 1996). They say: "The fascia is the emotional body... Ideally, feelings are felt in the total body—emotions travel through the fascial web. We then interpret the physiological sensation as anger, affection, love, interest and so forth... The reason your neck can't straighten and lengthen may be because of the shock of being continually bullied in childhood. Physical work will only partially open that problem unless there is recognition that there may be an emotional origin."

So, having healthy connective tissue can also be linked to having

a healthy mind. However, the most important point here is that if you are underperforming physically then changes in your training regimen are not as important as making a particular mind shift.

Derrick Price, a trainer from the California University of Pennsylvania, says: "The more we learn about our connective tissue, the more we can integrate it with the other systems of the body (muscular, nervous, skeletal) and gain further insight into human movement and performance."

Furthermore, Andrew Taylor Still, the founder of modern Osteopathy, believed that "knowledge of the universal extent of the fascia is imperative, and is one of the greatest aids to the person who seeks the cause of disease."

Having fully functioning soft tissue, particularly connective tissue with healthy tone, is therefore vital, not only for optimal health and physical prowess, but emotional and mental performance too. ■



ABOUT THE AUTHOR: Sean Johnson is the owner of the **Centre for Structural Medicine** based in Randburg, Johannesburg. He has played provincial rugby at senior level in South Africa and in Australia. Having suffered a career threatening herniated disc in his lower back, he found an appreciation for alternative medical approaches with regards to rehab and sporting performance. The Centre for Structural Medicine offers a holistic approach in restoring the relationship between structure and function in the body. Email him at sean@structuralmedicine.co.za or have a look at www.structuralmedicine.co.za.



UNDER THE LID.

Only a select few know what's inside. I am one of them. The desire. This effort. My dedication. The years of paying dues. Overcoming obstacles, one after the other. Beneath the surface and under this lid, lies pride... And prodigious power. The sort of force capable of propelling me towards greatness. My journey is still ongoing and the fire inside still burns, hotter than ever. What's inside, what's under this lid, can't be contained.



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WE ALL GET STUCK IN THE NOTION OF TRAINING THE

BIGGEST MUSCLE GROUPS MOST OFTEN; the ones we can easily see in the mirror. But what about the others? What about the often forgotten yet just as important ones?

These widely neglected, under-the-radar muscles perform a variety of important functions, from stabilisation and grip strength, to supporting the big primary mover muscles in effectively and efficiently performing their main functions.

As the body functions as a unit, to gain functional strength and boost endurance, these often overlooked muscle groups also need to be worked adequately for a well-balanced, healthy physique. To work these muscles you can also boost your performance in your particular sport.

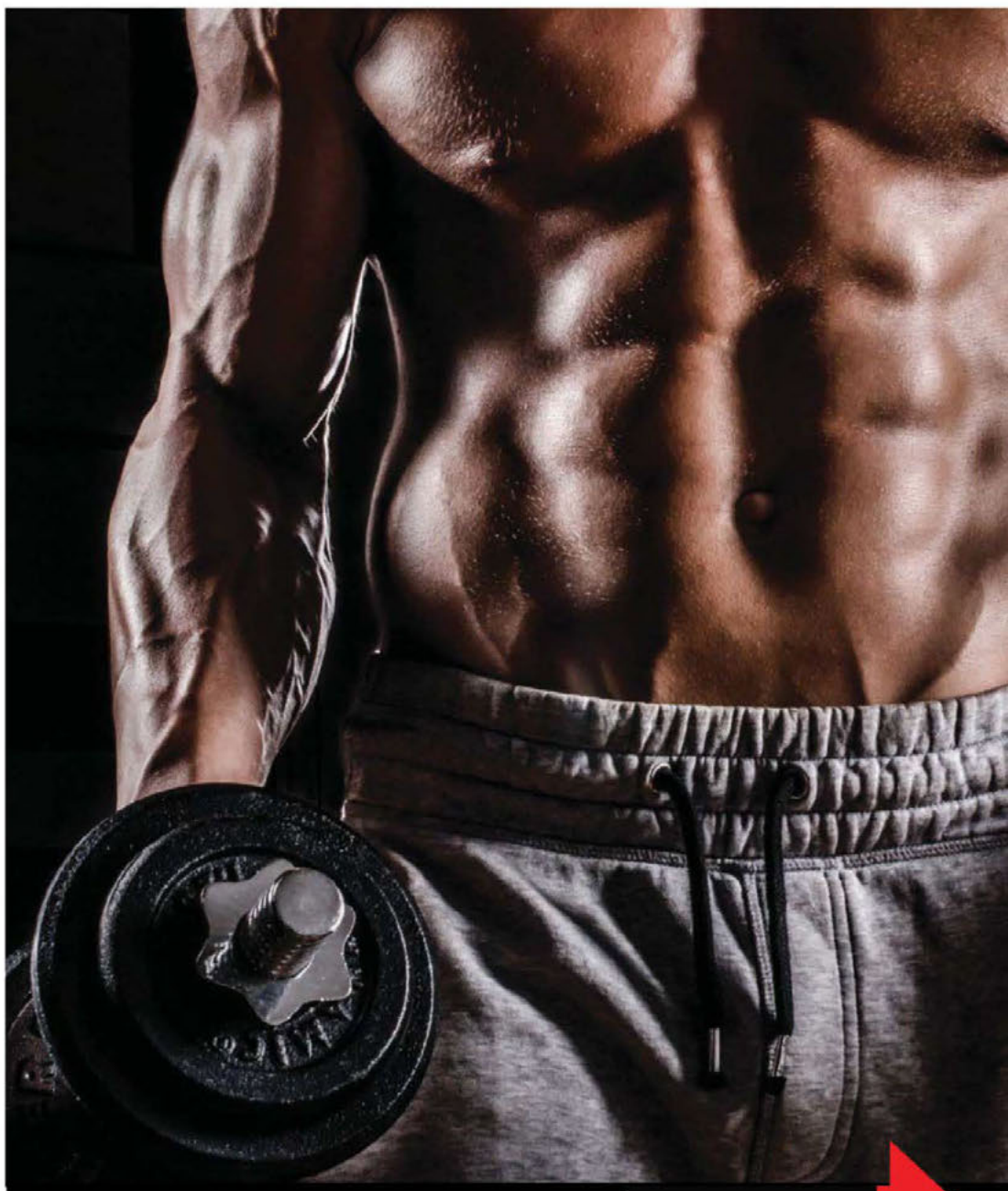
Even if aesthetics is your main aim, neglecting these smaller muscles, which have weird names like the brachioradialis, intercostals, abductor magnus and obliques, can often leave you with an unbalanced physique.

To ensure we're giving all muscles the time and effort they deserve we asked SuperSport United Football Club's strength and conditioning coach Craig Lewis to give us more insight into where these muscles are and how to train them effectively.

» By Werner Beukes, Deputy Editor

THE FORGOTTEN MUSCLES

■ **TARGETING THE WIDELY NEGLECTED, UNDER-THE-RADAR MUSCLES FOR BALANCED DEVELOPMENT**



BRACHIORADIALIS

The brachioradialis starts on the humerus (upper-arm bone) and attaches to the radius (the forearm bone). This muscle's main function is to flex the forearm, especially when quick movement is required or when a weight is lifted during slow flexion of the forearm. It is a power and speed generator, and acts most efficiently when the forearm is in the mid-prone position.

To get extra out of your forearm training you need to hit the brachioradialis area effectively.

AS THE BODY FUNCTIONS AS A UNIT, TO GAIN FUNCTIONAL STRENGTH AND BOOST ENDURANCE, THESE OFTEN OVERLOOKED MUSCLE GROUPS ALSO NEED TO BE WORKED ADEQUATELY FOR A WELL-BALANCED, HEALTHY PHYSIQUE.

the punching of a boxing bag directly improves forearm strength." Any muscle involved in a repetitive action will, over time, improve the strength of that muscle. In the case of punching, the forearm is definitely involved in this activity as anyone who has done boxing can testify, and the forearm would, among many other things, get a great workout. Of course, before beginning this activity, it may initially be important to strap the wrist prior to commencing the boxing. Other elements such as correct technique and adequate levels of strength would also be important to consider prior to adding this into your routine. Often, punching a boxing bag is a great form of active recovery, meaning that in-between sets or exercises from a strength perspective you could add in a short punching element. You get a great workout and more bang for your buck with a combination of strength and anaerobic power. It is also a useful tool from a cross training perspective for an athlete requiring or looking to maintain good hand speed and effective hand-eye coordination."

THE SOLUTION

Get a good grip

■ Hand grippers (a particular piece of equipment designed to improve grip strength), barbell hold (using an Olympic bar), farmer's carries, plate pinches with hold (pinching together two small weight plates), adding Fat Gripz to your dumbbells and squeezing a tennis ball are all additional forms of exercises which may assist in maximising your grip strength.

However, Lewis cautions against doing too much too soon as tendonitis of the forearm is normally associated with a poor lifting technique or going too heavy too quickly. "In respect of repetitive strain injuries of the forearm, a progressive programme of strengthening this region along with corrective stretching can, to an extent, alleviate certain issues around this region," he says. In other cases, tendonitis-related injuries around the elbow can generally be attributed to incorrect swing mechanics when you play tennis or golf, or an incorrect or weak grip when you are using a 'heavy' racket or club.

Constant and repetitive exposure

to heavy weights can also lead to a degradation of tendons, joints and muscles. "Slow, steady progressive implementation of a training plan will assist in reducing the effects of exposure to tendon and muscle breakdown. Also, allowing for adequate rest between bouts of heavy weight training will assist in reducing muscle breakdown as will effective nutrition."

Fixing it

■ In terms of the micro-tearing (very small tears in tendons, ligaments and muscle) that occurs as a natural consequence of weight training may, in itself, not necessarily be or have a negative impact on an athlete. Says Lewis: "Any form of training will, to an extent, create a level of micro-trauma to the muscles which is an important by-product of training as this allows for changes to the muscle structure to occur and an improvement to the function of that muscle through an adaptation process. Prolonged exposure to excessive micro-tearing can, over time, create weaknesses within the structure of the muscle and lead to long term damage though. "However, paying attention to corrective strategies such as nutrition, rest and recovery, and progressive periodisation, the athlete can benefit from this natural by-product of training through the adaptation that occurs."

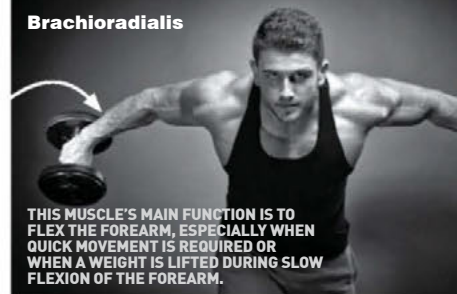
Do you need to lay off completely from training if you have tightness in your wrist flexors or extensors? What if your particular occupation requires you to do a lot of gripping, keyboard work and repetitive wrist and hand movements? "A complete lay off

from training may not always be necessary unless advised by a sports physician or therapist, but, certainly, a decrease in training load or volume is necessary until a reduction in symptoms occurs," says Lewis. In the interim, Lewis advises a corrective programme of stretching and strengthening as well as a review of your training technique. For example, change the grip if necessary or the equipment involved.

"Postural and behavioural modifications such as ergonomic

"TRAINING WILL CREATE A LEVEL OF MICRO-TRAUMA TO THE MUSCLES WHICH IS AN IMPORTANT BY-PRODUCT OF TRAINING AS THIS ALLOWS FOR CHANGES TO THE MUSCLE STRUCTURE."

Brachioradialis



THIS MUSCLE'S MAIN FUNCTION IS TO FLEX THE FOREARM, ESPECIALLY WHEN QUICK MOVEMENT IS REQUIRED OR WHEN A WEIGHT IS LIFTED DURING SLOW FLEXION OF THE FOREARM.

changes to your work environment may be necessary to alleviate symptoms in order to benefit from corrective exercises," says Lewis. Examples include changing your workstation to ensure correct set-up of your keyboard or laptop if you spend a large amount of time on a computer. "Small changes around your work environment may be enough to allow for correct forearm and wrist position to occur, thereby alleviating additional strain on the region in question."

In terms of forearm stretches to maintain the mobility and flexibility of the tendons within and around the wrist and forearm, Lewis recommends: "I generally find the forearm flexors to be in a shortened state. To stretch this region in

particular I would extend the arm at the elbow with the opposite hand gently pulling the wrist into extension. Alternatively, I would place the arm

side-on, with your elbow extended, with the palm into a wall and the fingers facing downwards towards the floor. This would elicit a stretch into the forearm flexors and possibly a stretch into the nerves of the upper limb (if they are deemed to be tight). Stretching of the other regions of the forearm and wrist are generally fairly limited and would simply require an action (sometimes with the assistance of the opposite hand if necessary) towards the opposite direction."

"POSTURAL AND BEHAVIOURAL MODIFICATIONS CAN ALLEVIATE SYMPTOMS."

You can do this by going thumbless on exercises such as reverse-grip barbell curls. By placing your thumbs on the top of the bar you are placing stress on the brachioradialis. This approach will build your grip strength and will have a positive effect on the rest of your grip work when you train big muscle groups like your back. Reverse-grip barbell curls with a wide or narrow grip, low pulley or the EZ bar will also work this muscle to beef up your arms.

When asked if an activity like punching a bag could improve your forearms, Lewis states: "There is not a lot of literature on whether



Diaphragm and Intercostal Muscles.

DIAPHRAGMATIC MOVEMENTS ARE ALSO IMPORTANT IN HELPING TO RETURN BLOOD TO THE HEART. FROM A STRENGTH TRAINING PERSPECTIVE, THE DIAPHRAGM IS ALSO USED WHEN LIFTING HEAVY WEIGHTS.

DIAPHRAGM AND INTERCOSTAL MUSCLES

The thoracic diaphragm is effectively a dome-shaped musculotendinous partition between the thoracic (chest region) and the abdominal cavities (spaces). The diaphragm is the principal muscle of respiration and forms the floor of the thoracic cavity and the roof of the abdominal cavity. The diaphragm is principally used during inspiration as the dome-like structure moves downwards to form a flattened position to increase the thoracic cavity and decrease the intra-thoracic pressure with air being taken into the lungs. Diaphragmatic movements are also important in helping to return blood to the heart. From a strength training perspective, the diaphragm is also used when lifting heavy weights. In preparation for lifting, the lifter inspires deeply to raise the intra-abdominal pressure and to give additional support to the vertebral column.

Inspiratory muscles

The space between the ribs called the intercostal spaces contain three layers of muscles typically called the intercostal muscles. The superficial layer is the external intercostal muscle,

the middle layer is the internal intercostal muscle and the deepest layer is the innermost intercostal muscle. All these inspiratory muscles elevate the ribs. This movement assists in expanding the thoracic cavity. All three layers of intercostal muscles keep the intercostal spaces rigid, thereby preventing them from bulging out during expiration and from being drawn in during inspiration.

Lung function

Athletes such as runners, for instance, think about training their hearts and legs but they rarely think about training their lungs and there are ways in which we can improve your respiratory system to improve your endurance.

"Unfortunately, much of what happens from a lung function perspective is down to biochemistry and at a cellular level, and improvements can be difficult to make," says Lewis. "Genetic factors also play an important role in improving cardiovascular and respiratory ability. There are, however, ways to improve the respiratory system to an extent and this often has a lot to do with breathing and postural re-education.

"I often find that many

individuals tend to be very shallow breathers principally because they breathe incorrectly and often because their diaphragms are locked up. Releasing the diaphragm (an often painful experience) is sometimes an important departure point. Once done, teaching the individual to breathe diaphragmatically as opposed to breathing purely from the chest becomes an important factor in retraining the entire respiratory system."

Once this re-education has occurred, a number of breathing exercises can be utilised to improve the system. "There are also a number of lung function machines on the market which also assist in improving respiratory function provided that, in my belief, the re-education process had previously occurred. From a non-exercise standpoint, corrective nutrition can also assist in improving lung function and therefore the respiratory system which will, in turn, assist in improving an individual's endurance levels."

ATHLETES, SUCH AS RUNNERS, THINK ABOUT TRAINING THEIR HEARTS AND LEGS BUT THEY RARELY THINK ABOUT TRAINING THEIR LUNGS.

SERRATUS ANTERIOR MUSCLE

The serratus anterior muscle's major action is protraction of the scapula (shoulder blade). Protraction in respect of this muscle is effectively the sliding of the scapula forward and up over the thoracic cage. It also holds and fixes the scapula against the thoracic wall. Because it is active during punching-based movements it has been called "the boxer's muscle". It also assists in rotating the scapula.

According to Lewis, any punching-based exercise will assist in strengthening the serratus anterior. Standing cable protraction, theraband "hugs" with shoulder protraction and a push-up plus on the floor or against the wall (push-up position with end-range rounding of the upper back thereby inducing scapula protraction) are some of the exercises he would recommend to strengthen the serratus anterior.



PUNCHING-BASED EXERCISE WILL ASSIST IN STRENGTHENING THE SERRATUS ANTERIOR.

Serratus Anterior Muscle

HIP FLEXORS

Independently the psoas and iliacus muscles act conjointly in the flexing of the thigh at the hip joint and in stabilising this joint. The combination of the two, known commonly as the iliopsoas, acts as the strongest flexor of the thigh at the hip joint. The iliopsoas is also an important antigravity postural muscle which helps to maintain erect posture at the hip joints. The iliopsoas also assists in flexing the trunk in respect of raising the trunk from the lying position (supine) to the sitting position.

THE SOLUTION

Iliopsoas training

"Any action which principally produces a flexion of the hip will actively involve the iliopsoas," says Lewis. A standing single leg cable hip flexion (with ankle strap) will effectively engage the hip flexors as the individual brings the knee toward the chest. Hanging bent knee leg raises (provided the abdominal and lower back regions are strong enough to provide support) will also effectively engage the hip flexors. Crunches that involve moving from a supine position into a seated position will also actively engage it (as in doing crunches in a roman chair). However, this is often to the detriment of the intended recipients, the abdominal muscles. Often this can lead to lower back pain as the iliopsoas shortens and impacts on the lower part of the spine (lumbar spine) at its muscle origin.

THE ILIOPSOAS IS AN IMPORTANT ANTIGRAVITY POSTURAL MUSCLE WHICH HELPS TO MAINTAIN ERECT POSTURE AT THE HIP JOINTS.

Hip Flexors



Gluteus Medius and Maximus

ONE OF THE KEY AREAS OF FOCUS FOR IMPROVED ATHLETIC PERFORMANCE

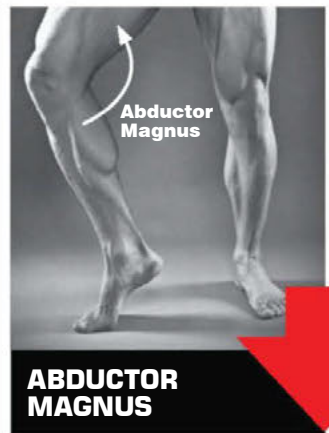
GLUTEUS MEDIUS AND MAXIMUS

From an athletic performance perspective, Lewis feels that both the gluteus medius and gluteus maximus are, for all intents and purposes, the most important muscles in the body and are certainly one of the key areas of focus for improved athletic performance. Unfortunately most men don't give them any special attention or focus.

The gluteus maximus is responsible for extending the thigh and assists in its lateral rotation, and also assists in raising the trunk from a flexed position into an upright or extended position. So,

for example, major exercises like squats and deadlifts must engage and utilise the gluteus maximus to have good form and correct execution. Any lateral movement of the thigh will also engage certain fibres of the gluteus maximus. The gluteus medius' major actions involve abducting (moving the leg out to the side) and medially rotating the thigh (inward rotation of the thigh). Another very important function is its stabilisation of the pelvis, so any pelvic stabilisation drill (often involving a single leg activity of some sort) will improve the gluteus medius. For any athlete, this is the key to reducing injuries and for enhanced athletic performance.

"ANY ACTION WHICH PRINCIPALLY PRODUCES A FLEXION OF THE HIP WILL ACTIVELY INVOLVE THE ILIOPSOAS."



The abductor magnus comprises both the adductor (groin or inner thigh) and hamstring parts with different attachments, nerve supplies and actions. It originates from an area around the pubic bone and inserts into a large area from the upper 1/3 of the femur (thigh bone) and down towards the bottom, inside aspect of the femur towards the kneecap region.

Its actions consist of adducting the thigh (inward movement of the leg towards the mid-line) and flexing it (knee bend), as well as extending the thigh (hamstring part). Principally, in order to work the adduction function, one would need to adduct the thigh with a bent knee, while the hamstring part works with a straight leg position. The internal oblique muscle is a middle layer abdominal wall muscle that runs from the thoracolumbar (mid to lower spine) and hip region towards the lower border of the 10-12th ribs of that same side and, simultaneously, downwards towards the pubic bone region (i.e. it effectively runs from the spine between the bottom ribcage and hip towards the mid-line of the body). This muscle, in conjunction with the external oblique, compresses and supports the abdominal organs (thereby acting as an abdominal stabiliser) while at the same time assisting in flexing and rotating the trunk. As a result it is a very important muscle, alongside the external obliques and transversus abdominis in stabilising the abdominal wall, in addition to its responsibilities in trunk rotation and flexion. This makes it an important muscle for any sport performed in a standing position or those that require powerful rotational movements like tennis and golf. ■



» By Pedro van Gaalen, Editor

■ HOW CONVENTIONAL THINKING AROUND OPTIMAL HYDRATION IS SHIFTING

SWEAT SCIENCE

Drink 3l of water a day and an extra 500ml for every 20 minutes of strenuous exercise. That has been the broad conventional guidelines around hydration for years as dehydration has been touted as the main cause of decreased performance, particularly during endurance events, for decades.

However, if you do the math that's 1.5 litres of fluid every hour during exercise. If you run a marathon in four hours that equates to an intake of 6 litres of water... a truly eye-watering figure. Double the distance and time for an Ironman triathlon or an ultra-marathon and athletes could conceivably consume between 8-12 litres during an event.

While drinking this volume of fluid may seem logical as a strategy to stave off the performance-sapping effects of dehydration, it can actually lead to a more serious condition.

Over the last few years a clearer picture has emerged of our real hydration needs during exercise, one that shows that mild dehydration (which equates to a 2-6% decrease in body weight based on various studies) does not impair exercise performance in the heat, and that over-hydration, which leads to a condition known as exercise-associated hyponatremia, is a far greater concern.

DEADLY SERIOUS

Hyponatremia is a serious condition where serum sodium concentrations drop to critically low levels due to a shift in water balance which can, and has in the past, lead to the death of athletes.

The main reason for this is that the condition prompts a rapid swelling of the brain that can result in seizures, coma, and, subsequently, death. Initial symptoms may include nausea, muscle cramps, disorientation, slurred speech, and/or confusion.


Unfortunately the conventional wisdom around optimal hydration for performance has been the major factor in the rise of this condition as athletes have been told to drink ahead of thirst for years.

The reasons for this are numerous, from the misinterpretation of scientific evidence by authors of popular running books, to the aggressive marketing of sports drinks in the US since the 1970s. This has led to a trend whereby most tend to drink far too much while training and racing, particularly

in hot and humid conditions.

It is a problem that Prof. Tim Noakes has been warning against for decades. Over 50 studies on the subject, including his seminal paper in the field, "Water Intoxication: A Possible Complication During Endurance Exercise", led him to publish *Waterlogged: The Serious Problem of Overhydration in Endurance Sports*, and he continues to vociferously decry the general recommendations for fluid replacement during physical activity.

Based on his research Noakes suggests that "if athletes drink when they're thirsty, they'll be fine". To put a figure on it, Noakes' letter titled "Sodium ingestion and the prevention of hyponatremia during exercise", published in the *British Journal of Sports Medicine* (BJSM) in 2004, stated that "the absolute maximum rate at which these athletes [female runners who took up 4.25 hours to complete a marathon] should have ingested fluid during exercise was probably even less than 500 ml/h. This is substantially



"The conventional wisdom around optimal hydration for performance has been the major factor in the rise of hyponatremia as athletes have been told to drink ahead of thirst for years."

WEIGHT ANALYSIS

AN ADDITIONAL TOOL that athletes can use to determine how much fluid they need to replace after an event is to weigh themselves before, and aim to drink enough to replace the weight that was lost.

The 2014 study published in *Medicine & Science in Sports & Exercise* supported this practice when researchers concluded: "Attempting to maintain pre-race body weight, appears to be the best way to avoid overhydrating while adequately meeting fluid needs."

This is echoed in the ACSM's current hydration guidelines: "Because there is considerable variability in sweating rates and sweat electrolyte content between individuals, customized fluid replacement programs are recommended. Individual sweat rates can be estimated by measuring body weight before and after exercise."

With this approach athletes can estimate fluid requirements by weighing themselves before and after exercise. Each kilogram (kg) of weight lost is equivalent to approximately one litre (L) of fluid. Adding on the weight of any fluid or food consumed during exercise will provide an estimate of total fluid loss for the session. For example, an athlete who finishes 1kg lighter and consumed 1 litre of fluid during the event will have a total fluid loss of 2 litres.

less than the drinking guidelines of the American College of Sports Medicine (ACSM) and the Gatorade Sports Science Institute, which have promoted rates of fluid ingestion of up to 1200–1800 ml/h."

The ACSM regularly updates their position on hydration, and have since altered their guidelines somewhat. However, Noakes and others remain critical for a few reasons. **For instance, a few key points in the ACSM's recommendations (last updated in 2007) still include:**

- *Fluid replacement during exercise is meant to prevent excessive dehydration (weight loss greater than two percent from baseline body weight) and to avoid excessive changes in electrolyte balance in order to avert compromised performance.*
- *The guidelines note that consuming beverages containing electrolytes and carbohydrates often provides more benefits than consuming water alone.*

The issues with these guidelines are two-fold. Firstly, a study by Bradley Wall et al, published in the *BJSM* in 2013, found that "current hydration guidelines are erroneous: dehydration does not impair exercise performance in the heat." The study, which tracked the hydration and performance levels of well-trained cyclists who performed a 25km cycling time trial under ecologically valid conditions and were blinded to their hydration status,



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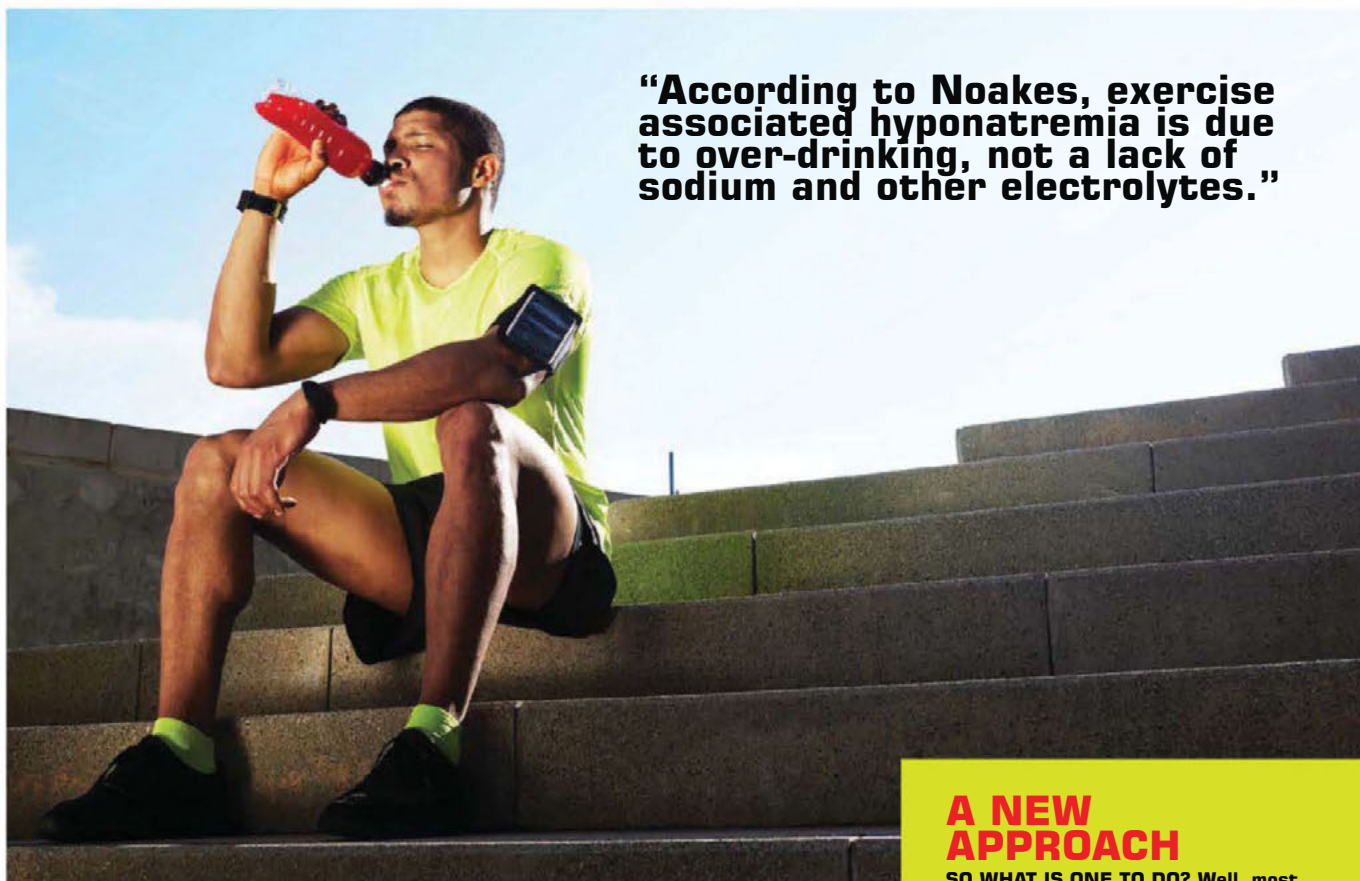
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“According to Noakes, exercise associated hyponatremia is due to over-drinking, not a lack of sodium and other electrolytes.”

A NEW APPROACH

SO WHAT IS ONE TO DO? Well, most research findings on hyponatremia echo Prof. Noakes' recommendations that athletes drink to thirst, rather than to a schedule, and that water is sufficient to maintain optimal hydration.

That's not to say you can't or shouldn't use an electrolyte replacement drink or a mainstream sports drink. There are other benefits to these drinks, such as the addition of liquid-based calories and carbohydrates for energy, and there is some evidence to suggest that 1/3 of cramp sufferers can find some degree of relief from the ingestion of electrolytes - sodium, potassium, magnesium, chloride, and/or calcium (review our feature of exercise-associated muscle cramping in the May/June issue for more info).

The important thing to remember is that total fluid intake should be managed according to guidelines that aim to prevent hyponatremia. The overconsumption of water and/or sports drinks and electrolyte solutions can all result in the development of this life-threatening condition. ■

determined that “performance, physiological and perceptual variables were not different between trials. These data do not support the residing basis behind many of the current hydration guidelines.”

Secondly, according to Noakes, exercise associated hyponatremia is due to over-drinking, not a lack of sodium and other electrolytes. Further support for this stance recently came to the fore in a study published in December 2014 in the journal *Medicine & Science in Sports & Exercise*.

The research team, led by Martin Hoffman, looked at “Sodium Supplementation and Exercise-Associated Hyponatremia during Prolonged Exercise”. They took blood samples, measurements from a series of weigh-ins, and answers to a questionnaire from participants in the 2014 Western States 100-miler trail run.

Based on their findings the researchers concluded that “a low sodium intake in supplements has minimal responsibility for development of hyponatremia during continuous exercise up to 30 hours, whereas overhydration is the primary characteristic of those developing hyponatremia. Therefore, avoiding overhydration appears to be the most important means for preventing hyponatremia under these conditions.”

In fact, there is some evidence to suggest that too much sodium taken during an event can also impair hydration, and may

exacerbate the condition. In addition, another study published in the *BJSM*, in 2006, conducted on Ironman triathlon finishers in South Africa, showed that “sodium supplementation was not necessary to maintain serum sodium concentrations in athletes completing an Ironman triathlon nor required to prevent hyponatremia from occurring in athletes who did not ingest supplemental sodium during the race.”

The researchers found that there “were no significant differences between the sodium, placebo, and no supplementation groups with regard to age, finishing time, serum sodium concentration before and after the race, weight before the race, weight change during the race, and rectal temperature, systolic and diastolic blood pressure after the race.”

They therefore concluded that: “Ad libitum sodium supplementation was not necessary to preserve serum sodium concentrations in athletes competing for about 12 hours in an Ironman triathlon. The Institute of Medicine's recommended daily adequate intake of sodium (1.5 g/65 mmol) seems sufficient for a healthy person without further need to supplement during athletic activity.”

“An electrolyte replacement drink or a mainstream sports drink do have benefits such as the addition of liquid-based calories and carbohydrates for energy.”



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» BY Werner Beukes, Deputy Editor

NATURAL SLEEP ENHANCERS

BECOME A SUPER SLEEPER

YOU DON'T BUILD MUSCLE IN THE GYM, YOU BUILD IT BETWEEN SESSIONS WHEN YOUR BODY RECOVERS, AND SLEEP IS A VITAL COMPONENT OF THAT PROCESS. Accordingly, getting the required amount of sleep each night is an essential element of every plan aimed at developing your physique, improving your strength or enhancing your sporting performance.

If, however, you find yourself lying awake at night staring at the ceiling it is highly unlikely that you'll reach your goals as a lack of shut-eye can lead to poor workouts and sub-par race performances, elevated cortisol levels, fat gain and, in most cases, it will turn you into a sleep-deprived, groggy version of your former self.

With so much to gain from a good night's sleep and such severe consequences for insufficient or poor quality sleep it pays to do whatever you can to get some good 'kip'. Natural sleep enhancers, for instance, can help you on your way to more quality time in slumberland. But before you head to your local pharmacy it's worth trying to address your sleeplessness with a few lifestyle adjustments. Try the following tips to 'hit the sack' quickly and safely:

2. ALCOHOL IS A NO-NO

Booze can potentially disrupt your natural sleep cycle and also causes dehydration which can result in poor sleep quality. It can also stunt testosterone release and impair muscle growth, two of the most important and pronounced actions that occur while you sleep.



1. CUT OUT CAFFEINE AND ENERGY DRINKS

Enjoying a cup of coffee or two too close to bed-time will overstimulate your central nervous system which means you might end up counting sheep long after you switched off the lights.

Certain energy drinks can also make you feel jittery due to all the stimulants they contain, so cut out the caffeine and energy drinks long before you turn in for the night.



NATURAL SLEEP ENHANCERS, CAN HELP YOU ON YOUR WAY TO MORE QUALITY TIME IN SLUMBERLAND.

3. LIGHTS OFF

When you are ready for bed make sure you turn off all the lights and all light-emitting devices such as cellphones, tablets, laptops and the television. Any form of artificial light has the potential to affect the release of melatonin, an important sleep-regulating hormone, and alter your circadian rhythm, which controls your biological clock. This may result in night-time wakefulness or altered sleep patterns. The best sleep happens in total darkness.

4. TIME YOUR WORKOUT

When you are training hard in the gym you are naturally raising your body temperature and this might disrupt sleep in the middle of the night. You won't be able to sleep or you may struggle to fall asleep if your body temperature is too high. Schedule your workouts wisely and train at least three to four hours before you go to bed.



5. OPTIMISE YOUR ENVIRONMENT

The bedroom is generally designed to be a sacred place aimed at catching some much needed zzz's. Don't do any work in bed because it will prevent you from turning off your mind and it will over-stimulate your senses. You don't need that right before you go to bed. When you retire for the night don't think about things you need to remember. Rather keep a piece of paper next to your bed and write them down so you can release them from your conscious. If you don't make your bedroom a place for slumber you will only exacerbate your insomnia.

IF YOU'RE STILL HAVING A HARD TIME FALLING ASLEEP AND/OR STAYING ASLEEP THE FOLLOWING SLEEP ENHANCERS MIGHT BE OF HELP:

1. ZMA

This powerful mineral combo of zinc and magnesium is known to be a solid sleep enhancer. Magnesium deficiency among hard training athletes is common and magnesium plays an important role in the functioning of GABA (Gamma Aminobutyric Acid) receptors, which is the primary neurotransmitter responsible for calming your central nervous system, relaxing you and preparing you for sleep. Low levels of this mineral can also negatively impact overall sleep quality and decrease testosterone levels. You will only feel a difference when you take it consistently over a period of two to three weeks so don't expect it to work immediately after you start using it. ZMA supplementation can be taken any time of the day.

2. LAVENDER OIL

This is a helpful option when you find yourself tossing and turning at night. We know from ancient texts that this essential oil, obtained by distillation from the flower spikes of certain species of lavender, has been used with great success by our forefathers for medicinal and religious purposes. It aids in putting your body in a relaxed parasympathetic state. It will improve your overall sleep quality by calming your mind, reducing overall stress and decreasing your blood pressure. It also helps people to feel refreshed upon waking in the morning. Take it about half an hour before you go to bed.



3. MELATONIN

This hormone regulates your sleep and wake cycles through changes in concentrations in response to light.

You can increase your melatonin production naturally by avoiding electronic light late at night and by sleeping in a dark room. You can also boost its production by eating cherries and bananas. If this does not help, you can start supplementing your intake by taking 1-3mg of melatonin 30 minutes before you hit the sack. Start with a low dose and gradually increase it if necessary in increments of 500mcg (half of 1mg) until you find the correct dose to deliver a good night's sleep.

4. VALERIAN

The roots of this non-toxic plant can help you sleep better as they are used as a sedative and sleeping aid. It is believed to work by increasing the amount of GABA which helps regulate the action of nerve cells and has a calming effect. It is most effective when you take it regularly over a period of two to three weeks. It could also increase the effects of other sleep aids.

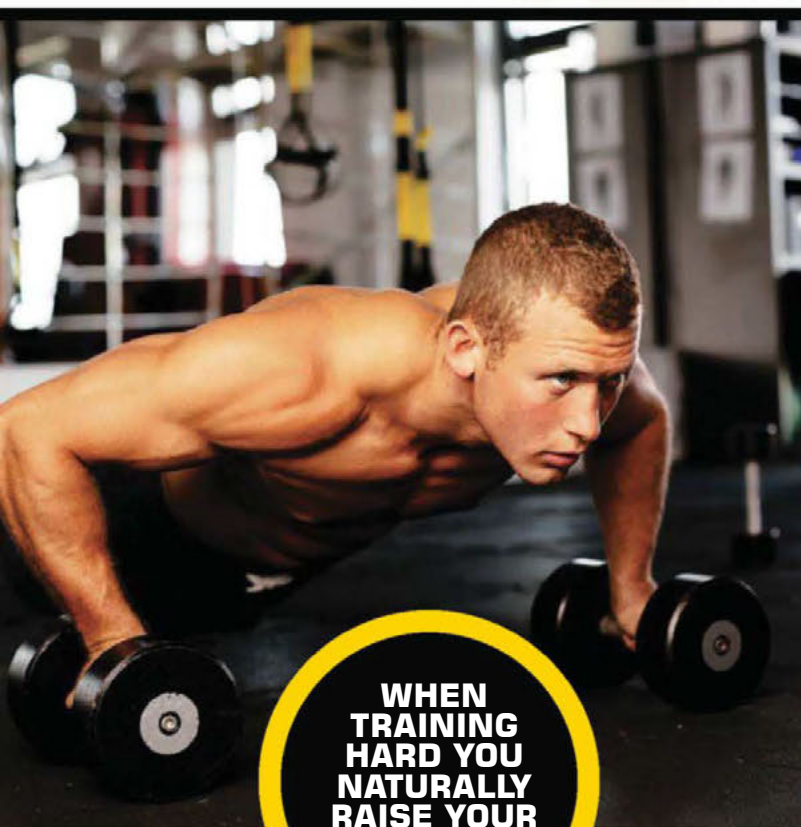


5. CHAMOMILE

Well known for its health benefits and as an effective remedy for helping people to doze off, this ingredient is most commonly found in herbal tea. It will relax your muscles and bring on feelings of sleepiness. It has been successfully used as a traditional remedy for anxiety, heartburn, nausea and insomnia for decades. Have a cup of chamomile tea 15-30 minutes before you go to sleep as a potential sleep aid.

6. L-THEANINE

Consumed for its relaxant effects, this water-soluble amino acid is found in mushrooms and green tea. Japanese researchers tested the effect of L-theanine by giving volunteers 200mg. The volunteers' sleeping patterns were recorded on devices they had around their wrists. The outcome was that the volunteers did not sleep longer but L-theanine did cause them to sleep better. Sleep quality and recovery were also enhanced by L-theanine.



**WHEN
TRAINING
HARD YOU
NATURALLY
RAISE YOUR
BODY TEMP.**

Getting proper shut-eye is like solving a puzzle. You must try different remedies, tips and aids before you find the missing piece of your insomnia puzzle. Many people also suffer from medical conditions that negatively affect sleep and our constant exposure to stress and the fast pace of modern living generally means that we could all use some help in the sleep department. The key is to find which safe and effective sleep enhancer works best for you. ■

ZUCCHINI PASTA WITH MEATBALLS

Meatballs:

1 onion, finely chopped
2 tbsp olive oil
2 cloves garlic, crushed
1 slice whole-wheat bread
1/3 cup chicken stock
1 free-range egg, beaten
500g ostrich mince
Flour, for coating
1 can tomatoes
2 tbsp tomato paste
1/2 cup chicken stock
Handful of Italian spices
2 cloves garlic
Italian parsley, chopped, to garnish

Zucchini pasta:

2 zucchinis, peeled
1 tbsp olive oil
1/4 cup water
Salt and ground black pepper to taste

1. Preheat the oven to 190°C.
2. In a large saucepan over a low heat, gently soften the onion in the oil. Stir in the garlic.
3. Crumble the bread and soak it in the vegetable stock. Mash the bread together and set to the side.
4. Mix together the egg, onion and garlic, and mince. Season to taste.
5. Taking the bread and mince mixture, make 10-12 golf ball-sized meat balls. Lightly dust with flour.
6. For the sauce, mix together the can of tomatoes, tomato paste, 1/2 cup chicken stock and Italian spices.
7. Place the meat balls in an oiled baking pan, cover with the sauce and bake for 30 minutes or until just cooked and nicely coloured.
8. Cut the zucchini into thin slices using a vegetable peeler. Cut the zucchini slices into thinner strips to resemble that of spaghetti.
9. In a medium-sized pot over a medium heat, cook the zucchini in some olive oil for about a minute, then add the water and cook until the zucchini is soft (5 to 7 minutes).
10. Season with salt and pepper.
11. Toss together with the meat balls and serve.



DID YOU KNOW?

Zucchinis only provide 17 calories per 100g and they contain no saturated fat or cholesterol.

» By Melanie Heyns, Features writer

WINTER WARMERS

HEALTHY ALTERNATIVES TO COMMON WINTER COMFORT FOOD

When the mercury drops we tend to crave more comfort food – warm, energy dense sustenance to get us through those long winter nights. Thankfully this type of food doesn't have to destroy your physique.

ONE SERVING OF OSTRICH MEAT CONTAINS 9.5G OF FATS, OF WHICH 2.4G IS SATURATED FAT. ONE SERVING WILL ALSO PROVIDE YOU WITH 84% OF YOUR DAILY VITAMIN B12 REQUIREMENT.

CHICKPEA AND CARROT SOUP

2 tsp olive oil
1 leek, chopped
500g chopped carrots
½ cup orange juice
4 cups chicken stock
300g chickpeas, undrained
½ tsp mixed spice
2 tsp chopped fresh tarragon, to serve

1. In a large saucepan over a medium heat, cook the leek and carrots until soft, stirring every 10 minutes.
2. Add the orange juice, stock, chickpeas and mixed spices, bringing it to the boil. Reduce the heat to a simmer and allow to cook for 15 minutes.
3. Blend the soup until smooth and lump free.
4. Pour it back into the saucepan. Season with salt and pepper.
5. Stir until heated through and serve.

1 CUP OF COOKED CHICKPEAS CONTAINS 0.2MG OF THIAMIN AND VITAMIN B6, 80MG OF CALCIUM, 79MG OF MAGNESIUM AND 276MG OF PHOSPHORUS.



DID YOU KNOW?

One cup of cauliflower contains 25 calories, 01.g of fat and 5.3g of carbs.

COTTAGE PIE WITH CAULIFLOWER MASH

Filling:

500g lean minced beef
2 medium onions, chopped
2 celery sticks, sliced
2 medium carrots, diced
400g chopped tomatoes
2 tbsp tomato purée
500ml beef stock
1 tbsp Worcestershire sauce
1 tsp dried mixed herbs
1 tbsp cold water
Flaked sea salt
Black pepper

Cauli mash:

1 cauliflower finely chopped
1 onion, sliced
1 garlic clove, smashed
1 tbsp olive oil
Salt and pepper
¼ cup vegetable stock

1. Preheat the oven to 200°C. In a large saucepan, cook the mince, onions, celery and carrots for 10 minutes until slightly coloured.
2. Stir in the tomatoes, tomato purée, beef stock, Worcestershire sauce and mixed herbs.
3. Bring the whole mixture to the boil, reduce the heat, cover and allow to simmer for 40 minutes (or until the meat is tender) making sure to stir occasionally.
4. Sauté onion and garlic in olive oil in a large pot over a medium heat until softened. Add the chopped cauliflower and vegetable stock.
5. Cover the pot and allow to simmer for 5 – 10 minutes.
6. Remove the pot from the heat and place the cauliflower mixture in the blender until smooth and creamy.
7. In a large oven-proof dish, layer the mince evenly and then layer the cauliflower mash over it.
8. Place in the oven and bake for a further 40 minutes or until the mash turns golden brown. ■

ONE 100G SERVING OF LEAN MINCE CONTAINS 214 CALORIES, 15.3G OF FAT AND 18G OF PROTEIN.

In search of the best alternative gyms in South Africa

» By Pedro van Gaalen, Editor

OFF THE BEATEN TRACK

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About Functional Training Constantia

This strength and conditioning training centre focuses on making clients stronger in every aspect of training, and in everyday life. The institution's goal is to get members to look like athletes and to be able to move and train like them too.



Natasha Gorrie was a provincial gymnast, water polo and hockey player representing SA. In 2012 she achieved 1st SA Pro woman for 70.3 Ironman and came 4th overall. She was crowned SA Champion in the Long Distance Triathlon championships in 2011. Natasha competed in Long Distance Triathlon internationally for South Africa for four years. She was awarded The Best Fitness Instructor of 2014 in South Africa for Virgin Active. Natasha has done 2 Comrades marathons, thirteen 947 cycle races, competing in the elite batch for 3 years. She has also competed 8 times in the Cape Argus.



Interview with owner Natasha Gorrie

1. Tell us a bit about yourself.

I'm driven, passionate and dedicated to accomplishing the best in my life, training and career. This gives me the perfect balance in life, which I believe is important. I work hard to achieve the goals I set for myself and I want the same for the people I'm in contact with and are part of my life.

2. How would you describe your gym?

We provide our clients with the best training and service we can to get them to accomplish any goals they may wish to achieve. We simply train hard day in and day out to get the results we want. We offer group sessions where clients get to push their own limits within a safe community of like-minded individuals.

3. What is your training philosophy?

Eat, train, sleep, repeat. Is it going to be easy? No! Will it be worth it? Yes!

4. What services do you provide and what types of clients do you cater to?

We offer personal training, corporate fitness, nutritional advice, weight loss, muscle toning, core strength, posture correction, cardio fitness, sport-specific training, strength training and power lifting.

5. What facilities do you have?

Our gym has showers, changing rooms, an office for sport massage and the main training area.

6. How does your training and facility differ from other, more commercial gyms?

My clients are typically busy individuals who don't have the time nor wish to do all the research required to develop training regimens for themselves. Our facility offers these individuals the opportunity to train hard, with varied programmes and exercises as we take the guesswork out of training for them. As an experienced professional sportsperson I can assist any individual in reaching their goals.

7. What benefits would someone gain by training at your facility as opposed to a big commercial club?

Personal attention, professionalism, a great atmosphere, the social benefits that come with training in small groups, varied training, and a non-competitive yet highly effective environment.

8. What is the atmosphere like at your facility?

We offer a community atmosphere that is safe and friendly. Our clients are encouraged to push their limits without the fear of being judged. We do not encourage our clients to compete against each other which allows them to progress at their own pace. ■

"I CAN ACCEPT FAILURE. EVERYONE FAILS AT SOMETHING, BUT I CAN'T ACCEPT NOT TRYING." - MICHAEL JORDAN



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QUICK STATS:**Age:** 23**Height:** 1.64m**Competition weight:** 53kg**Off-season weight:** 59kg**Profession:** Personal trainer**Where are you from?** Benoni**Why do you compete?** I'm obsessed with being fit and improving my physique.**Have you always been an active person?** Yes, I've always been involved in some type of sport – I'm a tomboy at heart.**What do you do to get such shapely legs?** I do plenty of old school squats, leg presses, jump squats and walking lunges.**How do you conquer comp diets?** I regard food as fuel and snack on raw veg.**What supplements do you use?** A protein shake, L-glutamine, vitamin C, folic acid, BCAAs and a multivitamin.**Do you enjoy your job as a personal trainer?** There's nothing more rewarding than helping people achieve what they thought was impossible.**What would you say are your strongest physical attributes?** My legs and glutes.**What is your biggest gym pet peeve?** When I forget my headphones and they play horrible music at the gym!

BIANCA

VAN RENSBURG

» By Werner Beukes, Deputy Editor
» Photography by Richard Cook



Where is the best place to be on a Friday night? At home, watching DVDs and enjoying a cheat meal!

What do you love to do when you are not training? Spending time outside on a sunny day while playing with my dogs.

What's your favourite cheat meal? Anything with carbs! I'm also addicted to frozen yoghurt and stuff myself with sushi every now and then.

What motivates you the most in life? I don't ever want to stagnate in fitness, business or my personal life.

What, in your opinion, is the sexiest male characteristic? A man must have confidence but without the arrogance.

How do you handle guys who harass you in the gym? I just laugh it off and call them window shoppers.

You have a few tattoos. What's next? I am currently busy with a back piece.

Describe yourself in one word? Clumsy.

What city would you still like to visit? Rome, Italy.

What is the last thing you do before you go to sleep? Make a cup of tea. ■

STRAIGHT OUTTA BENONI AND ON TO THE COMPETITIVE STAGE

Bianca van Rensburg exudes the kind of sexiness that makes grown men do silly things. She burst onto the competitive stage last year at the Rossi Classic by winning the Miss Toned Bikini, Miss Legs and Miss Toned Bikini Overall titles, and then cemented her standing as a top contender in 2015 by taking the Overall woman's title at the Rossi Grand Prix.





Hair loss and male pattern balding are common conditions that most men will have to deal with at some stage of their lives. For guys who train regularly in the gym it is an even greater reality as the leading cause of hair loss in men is androgenic alopecia – a condition caused by a hair follicle's underlying susceptibility to androgenic miniaturisation.

WHAT EXACTLY IS CAUSING YOUR HAIRLINE TO RECEDE?

THE LINK BETWEEN HORMONES & HAIR LOSS

DID YOU KNOW?

Everybody sheds between 40 - 150 strands of hair per day.

In a quest to build the most muscle men lift weights in an effort to, among other things, boost the production of specific androgens, most notably testosterone, and they aim to keep those levels elevated. This is because testosterone is one of the most anabolic hormones produced by the human body, which means it plays a central role in the development of lean muscle tissue, as well as the development of primary and secondary sexual characteristics in males.

In the past high testosterone levels were directly linked to hair loss, most specifically male pattern

balding. However, extensive research has now identified the sex steroid and androgen hormone dihydrotestosterone (DHT) as the culprit.

The fact of the balding matter is that receptors within the follicle on the top part of the head are different to any other follicle on the body. When this hair follicle allows DHT to attach itself to these receptors the communication between the follicle and the brain is disrupted. In other words, the hair follicle is no longer able to tell the brain what it needs, resulting in the brain not supplying the hair follicle with the nutrients and nourishment it needs, which ultimately starves the hair.

DHT EXPLAINED

The enzyme 5-alpha-reductase converts free testosterone into DHT in the prostate, testes, adrenal glands and hair follicles, and the higher the proportion of DHT to testosterone, the faster the hair loss process becomes.

This process can actually cause DHT to shrink hair follicles, which will make it almost impossible for strong, healthy hair to grow or survive. DHT also causes follicles to sprout shorter, thins hair and shortens hair growth phases.

Research also indicates that, in fact, lower total testosterone levels are associated with

androgenic alopecia, along with higher unbound or free testosterone, and higher levels of other free androgens, including DHT. This is why the general misnomer about the link between high testosterone levels and hair loss was perpetuated.

Low testosterone levels can also lead to hair loss as this condition is associated with insulin resistance and higher levels of aromatase enzyme production. This means that more of the free testosterone you have will be converted into oestrogen and DHT, which results in hair loss. If testosterone levels are increased naturally (no exogenous administration) through better insulin management and the use of pharmaceutical and/or natural aromatase inhibitors, oestrogen conversion and DHT production will typically decline.

Low testosterone levels can also lead to hair loss as this condition is associated with insulin resistance and higher levels of aromatase enzyme production.

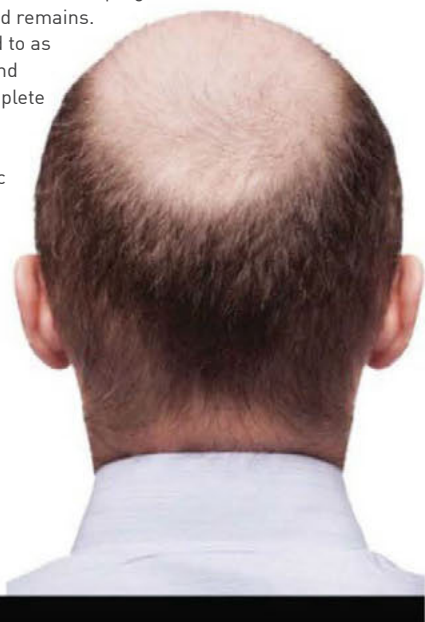
IDENTIFYING GENETIC HAIR LOSS

Determining the pattern and location of the hair loss on your head can help identify the type of hair loss being experienced, and ultimately what steps can be taken to solve that specific hair loss issue.

The degree and pattern of the baldness associated with androgenic alopecia varies. Typically your hairline will start to recede at the temples and will also thin on the crown. As it progresses a rim of hair at the sides and rear of the head remains.

This is generally referred to as a 'Hippocratic wreath', and rarely progresses to complete baldness. The Hamilton-Norwood scale is now used to grade androgenic alopecia in males.

TYPICALLY YOUR HAIRLINE WILL START TO RECEDE AT THE TEMPLES AND WILL ALSO THIN ON THE CROWN. AS IT PROGRESSES A RIM OF HAIR AT THE SIDES AND REAR OF THE HEAD REMAINS.



HOW TO LIMIT HAIR LOSS

There are a number of ways that men can try to limit androgenic alopecia. First and foremost it is essential that you maintain natural testosterone production levels. There are a number of products on the market that can

boost natural testosterone production such as ZMA, tribulus terrestris and eurycoma longifolia extract. These products also limit DHT production. Popular supplements and substances such as green tea extract, black tea extract, resveratrol and pomegranate extract also have aromatase-inhibiting properties and help to increase natural testosterone production to some degree.

There are also a number of haircare products on the market

CAFFEINE-BASED ANTI-HAIR LOSS SHAMPOOS FOR MEN, FOR EXAMPLE, USE CAFFEINE TO PENETRATE THE HAIR FOLLICLE AND SCALP, WHICH INCREASES BLOOD FLOW TO THE AREA AND STRENGTHENS THE HAIR FOLLICLE.

that help to promote hair growth and even slow down hereditary hair loss. Caffeine-based anti-hair loss shampoos for men, for example, use caffeine to penetrate the hair follicle and scalp, which

increases blood flow to the area and strengthens the hair follicle. This can help to reduce hair loss and limit male pattern baldness, but it is not a cure-all solution. Other treatments look to treat the cause rather than the symptoms by reducing the ability of DHT to bind with the hair follicle. A

growing number of products that are clinically proven to rid the follicle of this hormone are now available, along with a growing list of surgical solutions and dietary interventions

(For more information visit www.hairlossconference.co.za). ■

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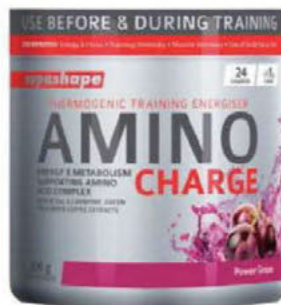
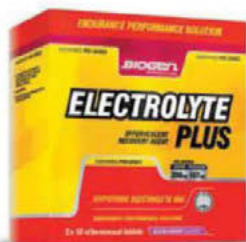
>> BY Melanie Heyns, Features Writer

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In addition to the comprehensive endurance series, Biogen now has a convenient and tasty electrolyte replacement formula to add to its impressive range. This effervescent hypotonic recovery formula comes in a pack of 3 x 10 effervescent tablets, and is available in a delicious and unique blackcurrant flavour. Ideal for any endurance athlete, simply drop one tablet into your water and replenish those electrolytes within seconds.

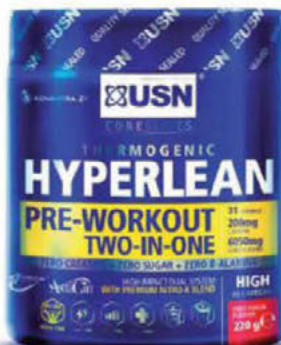


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FANS SCREAMED as the cream of South Africa's physique athletes strutted their stuff on the spectacular stage at this year's World Beauty Fitness and Fashion (WBFF) South Africa extravaganza, held at Carnival City in eastern Johannesburg on Sunday, 14 June 2015.

One wouldn't expect anything less from a production and spectacle of this scale, with a stage uniquely designed to accommodate a view from all angles. History was made with the first round stage ever at a WBFF show, ensuring judges could judge accurately and spectators could clearly view athletes in all their glory. This ensured the hard work of all athletes was fully displayed as the conditioned, glamorous bodies at the biggest fitness and fashion event this side of the equator strutted their stuff. With every step fans could see brand new WBFF professionals in the making.

The show's new title sponsor, leading global supplement manufacturer USN, also pulled out all the stops to ensure the weekend was something to remember for athletes and fans alike. The show certainly lived up to its billing and was everything everyone imagined it would be and more!

After countless months of hard dieting and extreme training athletes now had the chance to bag trophies and earn that sought-after pro card, which would catapult them to the next level. A total of nine pro cards were awarded on the evening.

The drop dead gorgeous WBFF Pro World Champion and internationally acclaimed fitness model Andreia Brazier made plenty of new followers as she set the tone for the evening with a jaw-dropping appearance on stage.

It was then time for all the contestants competing in the seven categories to shine as they walked into the limelight. It was clear from the start to all present that all the competitors had risen to the occasion and were in the best shape of their lives. As such, the only difference between winning and losing would be the level of stage presence, charisma and determination each competitor could deliver to reign supreme.

ABOUT ANDREIA BRAZIER: This Brazilian beauty is a three-time WBFF World Champion in the Pro Diva Fitness division. For workouts, eating guidelines and more visit www.andreiab.com or [AndreiaBrazierModel](https://www.instagram.com/AndreiaBrazierModel).

Wiltord Nyaruviro

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WBFF

SOUTH AFRICA 2015

» Report by Werner Beukes, Deputy Editor » Photography by Soulby Jackson - www.skjphotography.co.za



MALE FITNESS MODEL

- 1 Jesse Pretorius (Pro card awarded) (L)
2 Marco Araujo (Pro card awarded) (C)
3 Tiaan Barnard (R)

The first line-up of the evening was a new category – the transformation division. The eight contestants showed that through persistence and dedication it was possible for anyone to lose weight no matter what your circumstances. The five most inspiring athletes in this new division were Katy Brand, Sophia Strydom, Karen Grabe, Johanka Smit and Ben van der Westhuizen, who all qualified to go to Las Vegas in the US where the WBFF World Championships will be held on 14th and 15th August.

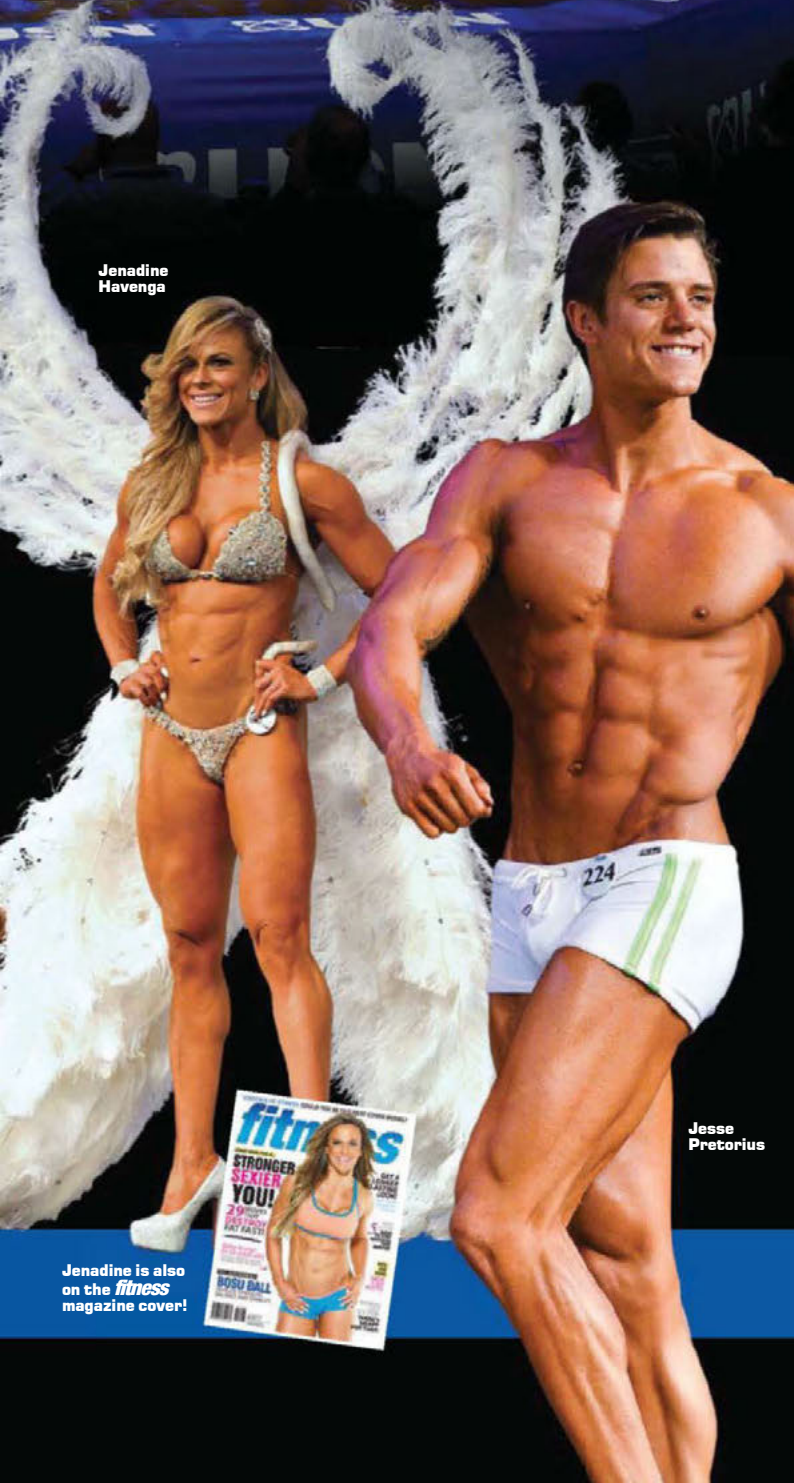
Female models then took to the stage in the Diva Bikini Model divisions, all in peak condition, to battle it out for the top spots.

In the Diva Bikini Model Short Class the incredible physique of a confident Le Che Hendry earned her first place and a pro card. The voluptuous Simone Cardoso was awarded second place after edging out Sarah Hall.

In the Diva Bikini Model Tall Class Carla King earned her pro card with a well-deserved first place. Arina Knipe came second and Wendy-Lee Uys bagged the last podium spot.

In the highly contested Ladies Figure Short category pro status was awarded to the classy Chante Minnie. She was overwhelmed with emotion after the judges announced the final outcome. Genevieve Botha came second and Enid Ferreira third.

Jenadine Havenga

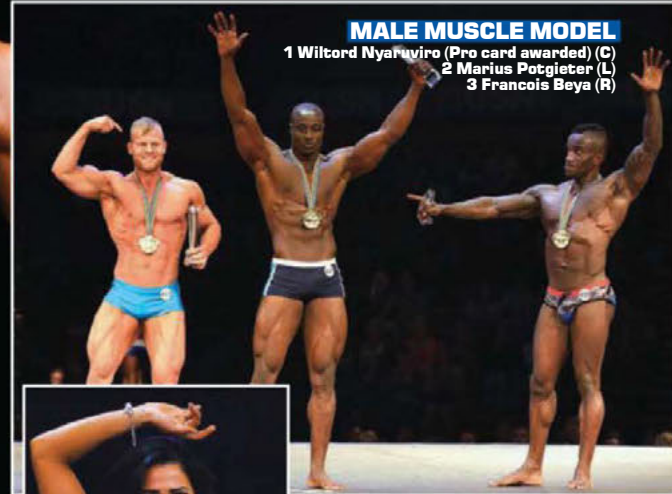


Jenadine is also on the *fitness* magazine cover!

Jesse Pretorius

MALE MUSCLE MODEL

- 1 Wiltord Nyaruviro (Pro card awarded) (C)
2 Marius Potgieter (L)
3 Francois Beya (R)



DIVA BIKINI MODEL TALL

- 1 Carla King (Pro card awarded) (L)
2 Arina Knipe (C)
3 Wendy-Lee Uys (R)



DIVA BIKINI MODEL SHORT

- 1 Le Che Hendry
(Pro card awarded) (C)
- 2 Simone Cardoso (L)
- 3 Sarah Hall (R)



LADIES FIGURE 35 PLUS

- 1 Genevieve Botha (C)
- 2 Samantha Hanna (R)
- 3 Enid Ferreira (L)



LADIES FIGURE SHORT

- 1 Chante Minnie
(Pro card awarded) (C)
- 2 Genevieve Botha (R)
- 3 Enid Ferreira (L)



LADIES FIGURE TALL

- 1 Chantell Kelly
(Pro card awarded) (L)
- 2 Samantha Hanna (C)
- 3 Zelda van Greuning (R)



FEMALE COMMERCIAL MODEL DIVISION

- (L to R) Kirsty O' Connell, Marijke Maritz, Ashlynn Russell, Rualize van Rensburg and Robyn Ashleigh Irwin

DIVA FITNESS MODEL SHORT

- 1 Jenadine Havenga (Pro card awarded) (C)
- 2 Elso Viljoen (R)
- 3 Chantal van Loggenberg (L)



DIVA BIKINI MODEL 35 PLUS

- 1 Sonia Matos (C)
- 2 Isobel van den Bosch (R)
- 3 Chantal Eshelby (L)

In the Ladies Figure Tall division it was the alluring Chantell Kelly, nicknamed 'Wonder woman' by her fans and family, who emerged as the winner, with Samantha Hanna in second place and Zelda van Greuning third. Kelly also earned her pro card.

Sonia Matos, winner of the Diva Bikini Model 35 Plus section, brought the conditioning required of any athlete to compete at this level and nabbed the title from Isobel van den Bosch (2nd) and Chantal Eshelby (3rd).

Mirie Linton had to settle for the runner-up spot in the Diva Fitness Model 35 Plus with Chantal van Loggenberg taking the honours in the division. Lorette Louw finished third.

One of the show's best proportioned athletes, Jenadine Havenga was richly rewarded for her conditioning, stage presence and confidence with a victory in the Diva Fitness Model Short category and a pro card. Elso Viljoen was second ahead of Chantal van Loggenberg in third.

Jana Perdijk was also awarded with a pro card after winning the Diva Fitness Model Tall division, leaving Ciemone van der Venter as runner-up and Tarryn Jarvis in third.

Robyn Ashleigh Irwin, Rualize van Rensburg, Ashlynn Russell, Marijke Maritz and Kirsty O' Connell made the top five in the Commercial Modelling section, also earning them the right to travel to Las Vegas for WBFF Worlds.

Jesse Pretorius muscled his way to the top spot of the Male Fitness Model category and was awarded with his pro card for his efforts

DIVA FITNESS MODEL TALL

- 1 Jana Perdijk
(Pro card awarded) (L)
- 2 Ciemone van der Venter (C)
- 3 Tarryn Jarvis (R)



DIVA FITNESS MODEL 35 PLUS

- 1 Chantal van Loggenberg (C)
- 2 Mirie Linton (L)
- 3 Lorette Louw (R)

on stage. Pretorius, one of the sharpest conditioned athletes at the show, came through the deepest and most competitive line-ups of 55 contestants to relegate Marco Araujo to second place and Tiaan Barnard to third.

The Male Muscle Model division was packed to capacity with athletes sporting slabs of thick muscle, and they rocked the stage. Eventual winner, Wiltord Nyaruviro, who also got his pro card, drew the biggest cheers from the crowd with a posing performance that best displayed his ripped physique, leaving Marius Potgieter in second place and Francois Beya in third.

Congratulations to all the athletes, sponsors, organisers and owners of the WBFF SA for running such an excellent show and giving deserving athletes a world-class platform to showcase their talents. If the WBFF SA 2015 is anything to go by in terms of sheer enjoyment and professionalism the next show will be even bigger and better. There was also a hint from founder Paul Dillett that the WBFF World Championships might be held in South Africa in 2016, so watch this space... ■

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